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CLYDE J. TIDWELL, *Editor*

Director, Bureau of Publications

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VOLUME XXXIII NUMBER 8

Teachers College
RECORD

May 1932

DIRECTING STUDY THROUGH THE ASSIGNMENT

By MAXIE N. WOODRING
Associate Professor of Education, Teachers College
AND CECILE WHITE FLEMMING
Director, Division of Pupil Adjustment, Horace Mann School, Teachers College

IMPORTANCE OF THE ASSIGNMENT

OF ALL the responsibilities which the teacher must face, the assignment is the most important. It is the pivot of successful teaching. It is the starting point of planning. The assignment which the teacher makes to a given group at a given time largely determines her plans and how she will carry these plans through. With the assignment she sets the stage for action and controls the amount and kind of pupil activity. It is the crux of the study problem. The amount of time spent in study and the quality of the preparation will be conditioned by the kind of assignment given. Whether the study activities will have carry-over values depends upon the character of the assignment. Will boys and girls of our high schools be able to attack a problem intelligently in later life? Will they know when and how to use the knowledge acquired? Will they be aware of sources to which they can go for help? Will they have developed methods of procedure, habits, and skills which will make them interested independent workers when the school experience is past? The

answers to these questions lie in the kind of assignments planned, the artistry with which they are presented, and the skill with which the preparation is directed.

The assignment as the term is used in this article includes not only the things teachers ask children to do, but also how they ask them to do these things, and the guidance given them in the doing. Therefore, directing study is an integral part of the assignment-technique. The assignment-technique for the teacher embraces:

1. The selection and organization of materials and activities for a given group or for individuals, based on (*a*) outcomes desired, (*b*) how children learn, and (*c*) careful and accurate diagnosis of the abilities and needs of those pupils for whom the assignment is planned.
2. The presentation of the planned assignment to the pupil or pupils, including direction needed for preparation.
3. The evaluation of pupil results as judged by the outcomes desired.

CRITERIA OF A GOOD ASSIGNMENT

Before discussing the significant factors which must be taken into account in putting across an assignment through skillful study direction, it is necessary to consider the "earmarks" of a good assignment. The following criteria indicate the characteristics which an assignment should have if it is to be effective.

1. It should have a definite and worthy purpose acceptable to teacher and pupil.
2. It should be clear, definite, and understood by every child in the group.
3. It should grow out of past and lead to future.
4. It should tap a genuine interest or awaken an interest; get a drive to do the thing suggested, an urge to want to do it; stimulate activity.
5. It should have appealing materials and should suggest activities based on adolescent traits and interests.
6. It should have sufficient variety to stimulate and maintain interest, but should not have too many and too varied activities to divide interests.

7. It should be reasonable as to (*a*) time demanded for preparation; (*b*) facilities provided for study; (*c*) availability of materials.
8. It should be adjusted to the mental ability of pupils.
9. It should provide for needs of the individual pupil.
10. It should give the help needed to facilitate economical learning.
11. It should clear up insuperable difficulties.
12. It should require only techniques which can be used skillfully.
13. It should help pupils develop economical and effective methods of work.
14. It should include practice in needed study techniques.
15. It should provide for checking devices or standards of measure so that a pupil can know when he has reached the desired end.
16. It should be economically and interestingly presented.

The final measure of an assignment is the effectiveness of the preparation by each pupil as evidenced by pupil activity, be it oral or written; mental, physical, or emotional.

Although observation and examination of many assignments given to boys and girls in our high schools reveal many, if not all, of the "earmarks" listed above, yet there is an ever-present and growing need keenly felt by teachers to-day for ways and means of better assignment-making. The tendency toward individualization of instruction, emphasis upon the unit plan of teaching, and direction of pupil study by the individual guide sheet has stimulated teachers and supervisors to clarify their aims and objectives; to select and to organize materials for study with greater care; to analyze the demands which the assignment makes upon pupils through study activities; to promote training in needed study skills; and to evaluate results obtained in terms of definite criteria. The shifting interest of teachers everywhere from subject matter to children has increased enormously the sincere effort to know more about children in order to provide for their individual needs and development. Citations from assignments which have been used by high school teachers offer suggestions to other teachers who wish guidance in directing study more effectively.[1]

[1] The assignments from which excerpts are taken are made available through the courtesy of teachers in the Scarsdale High School (N. Y.), Bronxville High School (N. Y.), South Philadelphia High School for Girls, the Dalton School (New York City), the Horace Mann School for Girls, Teachers College (New York City), Newport News High School (Va.), Williamsburg High School (Va.), and Rochester High Schools (N. Y.).

A Definite and Worthy Purpose

One of the most perplexing phases of assignment-making is how to succeed in having pupils recognize and accept the worthwhileness of the work to be done. Skillful teachers use a variety of ways by which they present the assignment to the child. A number of assignments that have been examined and observed emphasize the value of an interesting introduction, whether it be given orally by the teacher, brought out in a stimulating preliminary class discussion, or given in written form. An English teacher stimulated a genuine interest in the function of the newspaper by the following introductory discussion of "What Is News?"

ENGLISH—FOURTH YEAR
UNIT IN JOURNALISM

The job of reporting is romantic for the simple reason that it daily twangs all the chords of emotion. A click of the telegraph key may send a reporter up the gangplank on the first lap of a journey to remote Kamchatka. A simple police blotter entry may give the first scent of a murder that will rock the nation.

Here "romantic" means "adventurous" rather than "fantastic." The "chords of emotion" (a trite phrase, perhaps) means the feelings one has at watching the daily pageant of history-in-the-making. Emotion does not always mean sensationalism. The journalist who writes of this daily pageant sees romance, color, adventure always just around the corner. This consciousness is a constant pique to his curiosity and a stimulus to his writing.

What Is News?

1. A story of some kind of *human conflict* makes news.
2. A disaster story makes news.
3. The unusual, the strange, the phenomenal in nature make news. There is a certain glorious order in our universe. Spring follows winter, summer follows spring. To each season there are allotted qualities suitable to that season. A digression from the usual order—snow in April or May, for instance—makes news. The excitement of a football game conversation would not be appreciated at all manner of social gatherings. *Inappropriateness* makes news—because it departs from what is considered usual and natural. We hold certain notions of what sorts of actions belong to what sorts of times and places. Violations of this notion of order or unity in time, place, and action make news.
4. Stories of achievement make news. Stories of certain important personalities *always* make news. John Appleseed may walk ten miles every morn-

ing before breakfast and it is no news. However, just let Charles A. Lindbergh be discovered taking such early morning jaunts along New Jersey roads. . . .

5. On the other hand, John Appleseed *could appear* in the daily print. It is not so much *who* does *what*, but *who* does *what*, *where*, and *when*.
6. What kind of routine affairs in our social life make news?
7. Any event (an event means something *momentous*) is news.
8. Johnnie Appleseed may break his leg in Colfax, Iowa, and his story of that accident will be good first or second page news in Colfax. Can you think of any details in Johnnie's story which would make the New York papers copy the story of Johnnie's accident? In short, what makes news local, and *what takes* it beyond that locality in interest?
9. Why do you think so many stories about the Interborough Rapid Transit Company's five-cent fare disputes are published so conspicuously?
10. For our discussion to-morrow:
    (*a*) Find news stories distinctly emotional in their appeal. How do they differ from the other news stories you have collected?
    (*b*) Find examples of human beings entangled in conflicting situations.
    (*c*) Find clippings illustrating the unusual and the strange in nature.

Definiteness and Clearness of Statement

One of the most common causes of unsatisfactory accomplishment by pupils is their failure to understand the assignment. It should be sufficiently clear for the pupil to know definitely what he is responsible for. The following excerpts from assignments illustrate this essential clearness and definiteness of statement.

SCIENCE—SECOND YEAR

TOPIC: FOODS

This month we shall spend on a study of our ordinary foods. We shall learn about their composition, the methods of manufacture and preparation, and the changes which take place in foods when they are prepared for use. What different foods do for the body, and how they affect our health will also be considered.

Cereals

Unit 1. Cereals and what is made of them.

"All flesh is grass." What does that mean? Name as many cereals as you can. How do they resemble each other? How do they differ? Examine the cases and samples of cereals in the laboratory, and make a chart showing the important facts about the four most important cereals used in the world.

Unit 2. How is wheat flour made?

(*a*) Examine a grain of wheat carefully, and compare it with the large chart showing the wheat grain. Draw.

(*b*) Examine the flour milling charts and the samples, and make a brief outline of the process. Define or explain each process briefly.[2]

* * * * * * * * *

There are seven such units in this assignment under the sub-topic "Cereals," and similar units under the sub-topics "Sugar," "Milk," and "Cooking and Serving of Foods."

GERMAN—FOURTH YEAR

Monday. Answer questions orally on story in paragraph 73. Act out story in parts.

Tuesday. Be prepared to (*a*) write résumé of story in class, (*b*) do paragraph 75 orally. If you ever fail to understand directions for any exercise, refer to pages 289-306 for method of translation.

Wednesday. Write paragraph 76. Review paragraph 448.

Remember that: (*a*) If two nouns are used, the indirect object precedes the direct object; (*b*) if two pronouns are used, the direct object precedes the indirect object; (*c*) if one noun and one pronoun are used, the pronoun *always* precedes the noun, irrespective of case.

Thursday. Write paragraph 78. Be able to write the sentences on the board *without* your papers.

Friday. Read aloud three times the letter in paragraph 82 and be able to answer orally questions in paragraph 83.

Be responsible for the following expressions:

1. Mein Bruder lässt Sie grüssen.
2. Bitte, grüssen Sie Ihren Bruder von mir.
3. Mit herzlichen Grüssen.
4. Wie geht es Ihrem Bruder?
5. Hoffentlich geht es ihm gut.
6. Wie gefällt Ihnen das Buch?
7. Es gefällt mir sehr.

Use orally all the personal pronouns in these sentences:

1. Es gefällt mir hier sehr.
2. Berlin ist mir schon lange bekannt.
3. Mir und meinem Bruder ist hier alles neu.
4. Es macht mir viel Vergnügen. . . .
5. Ich grüsse dich.

[2] Asterisks are used to indicate the omission of material included in the assignments from which illustrations are taken.

This teacher has left nothing to chance. She has given very specific directions as to what is to be done with each part of the assignment in these day-by-day exercises.

ENGLISH—GRADE VIII
"ULYSSES AMONG THE PHÆACIANS"[3]

Minimum Assignment

1. Read very carefully the introduction to "Ulysses Among the Phæacians" (pages 215-218), and write the following exercises:
   (*a*) Tell what is known of the man Homer.
   (*b*) Give briefly in your own words the plot of the *Iliad* and the *Odyssey*.
   (*c*) Write in your own words what the introduction tells about the life of the people described in the poem.
2. Before attempting to read the poem it will be well to become familiar with the names of the many characters which you will want to know as you read. At the end of the selection (page 235), is a list of proper names marked in such a way as to make it easy for you to learn them if you understand diacritical marks. Do you know these marks? Test yourself by doing the following exercise: List the diacritical marks as given in any standard dictionary. Write down the vowels and see how many of the marks you have found may be used with each vowel. Then give examples of familiar words, indicating their pronunciation by the use of these marks. Ask your teacher for help if you need it.
3. Read the selection "Ulysses Among the Phæacians" and do the following:
   (*a*) Be prepared to tell the story.
   (*b*) Add to what you have already written any supplementary information you have gathered from the poem concerning the life of the people of Phæacia.
   (*c*) Mark the passage in the story that best pictures to you how Nausicaa looked. Be prepared to describe this picture to the class on the day designated for oral reports.
4. Read one of the other eleven adventures of Ulysses, and be able to tell the story in an interesting way to the class.
5. Write a description of one of the following: (*a*) Ulysses as he appeared at the beginning of the story; (*b*) the palace of Alcinous; (*c*) the garden of the palace.

[3] See *The Unit Plan of Teaching*. Matthew Whaley High School, Williamsburg, Va., Bulletin No. 1, pp. 20-24. School of Education, College of William and Mary, 1931.

6. Choose (*a*) or (*b*):
   (*a*) Paint, make pen-and-ink sketch of, or carve from soap one of the following: (1) Ulysses' ship; (2) Nausicaa's chariot.
   (*b*) With the assistance of other members of your group dramatize a scene from the story. Use costumes, if possible.

* * * * * * * * *

This selection from a contract assignment provides a marked contrast to the kind of assignment which gives merely the direction "Read carefully pages 79-93." The pupil is helped to an understanding of what is meant by careful reading. Further, the teacher provides a variety of interesting activities which strengthen the interpretation and retention of the material read.

Continuity in Interest and Thought

One of the distinct contributions made by the newer type of assignments covering several days or a longer period, is continuity in interest and thought. It is not possible to include in a short article a series of assignments needed to illustrate continuity. An able teacher obtains continuity in her assignments regardless of the method of presentation. Whether she makes them orally, or uses the typed assignment, whether the assignment is made from day to day or is given for a longer period of work, the tie-up is achieved through skillfully directed class discussion.

The tendency to organize work in longer units and to guide pupils' study by typed outlines has aided many teachers in securing a greater degree of continuity. Such continuity is illustrated by a series of assignments given by a teacher of biology. Unit I for a two-weeks' period considered the "Biology of Health"; Unit II followed on "How to Keep Well"; Unit III emphasized "Factors Essential to the Maintenance of Health." The study proceeded through a consideration of other problems involved in everyday living and health with varied and rich experiences in first-hand observation of the provisions of a modern city to maintain the health of its people.

Interesting, Stimulating, and Varied Activities

Teachers to-day realize that learning results only from the dynamic interplay of many elements. The one indispensable requirement for effective learning is an active, interested pupil. The accumulating knowledge about the adolescent boy and girl, and the more intelligent

understanding of adolescent traits enable high school teachers to develop more challenging and more appealing assignments. The period of the French Revolution seemed not merely a period in history to be studied in school but a time peopled by real men and women to the pupils whose teacher recognized the appeal of the dramatic to the adolescent.

1. You are the Duc d'Orleans in the year 1789. What privileges have you?
2. What faults would you find with the government, if you were M. Defarge of the bourgeoise?
3. Why does life seem hard to Jacques, the peasant boy?
4. You are King Louis XVI. Give your age (1789), your preferences as to amusements and occupation. What disadvantages have you inherited from your grandfather? What changes in government would you make?
5. Compare Marie Antoinette with Mrs. Coolidge as to pleasures, duties, and so forth.

A like appeal is made to the adolescent interest in mystery and adventure in the following questions taken from an assignment on *Silas Marner*:

1. Arrange a pantomime to show what happened in the sick Deacon's bedroom between two and four A.M.
2. You are the lawyer for the defense, appointed to defend Silas Marner, accused of the theft of the Deacon's money. Outline the defense.
3. How should you like to draw lots to determine whether you are guilty of theft?

In the English assignment given above on "Ulysses Among the Phæacians," the minimum assignment for all pupils in the class is cited. The same variety noted in the minimum requirement characterizes the assignment for "average" accomplishment and the suggestions for pupils whose time, ability, and interest would lead them to attempt the maximum work.

"ULYSSES AMONG THE PHÆACIANS"

Average Accomplishment

Choose three:

1. Define epic poetry. List three epic poems, with their authors, and be prepared to tell the story of one in a brief oral report.
2. Make a list of all the gods and goddesses in the story, and in a phrase or sentence characterize each.

3. Write a brief character sketch of Arete.
4. Tell in your words the part played by the goddess Pallas Athena in the story.
5. Design the front page for a newspaper. Let it be an extra announcing the arrival of Ulysses in Phæacia. Write or print the headlines which you think might appear on this edition.
6. Ask members of your class to help you draw or paint a frieze representing scenes from at least three adventures of Ulysses.

Maximum Accomplishment

Choose three:

1. Make a book of pictures relating to the characters, theme, or setting of the stories of the *Iliad* or the *Odyssey*.
2. Rewrite in dialogue or play form the conversation in the selection that interested you most.
3. Make a booklet to be called *The Social and Historical Age of Homer*. Mark it off in chapters with such headings as "Clothing," "Food," "Occupations," "Household Furnishings," "Famous Men," "Famous Women." List under each chapter as many things typical of the period as you can find. Do not limit your findings to this one selection, but read other articles dealing with Homer's world. Make your booklet more attractive with pictures, cartoons, or other drawings.
4. Compare Homer's world with our modern world with respect to modes of living, dress, recreation, and occupations.
5. Prepare for audience-reading some selection from the poem. Read it several times to your teacher before the presentation to the class. Remember that this type of assignment requires much practice, for when one reads aloud he should read not only with intelligence, but with interpretative expression.
6. Write a *short* original poem having as its theme any adventure of Ulysses.

Text: *Literature and Life*, Book I—Greenlaw-Elson-Keck.

Supplementary List:

1. *The Adventures of Ulysses*—Charles Lamb
2. *The Adventure of Odysseus and the Tale of Troy*—Padraic Colum
3. *The Odyssey of Homer*—Butcher and Lang
4. *The Odyssey of Homer*—Bryant
5. *Life in Ancient Athens*—Tucker

In describing the presentation of this assignment and the initiation of this unit of work, the teacher wrote:

On the day set for beginning the unit, "Ulysses among the Phæacians," each pupil was given a mimeographed copy of the assignment, and the entire class

period on that day was spent in explanation of the work. It was the teacher's purpose at that time to introduce the unit in such an interesting manner that each member of the class would look upon it not as a difficult, exacting task, but rather as a game to be played, a challenge which called forth one's best in the accomplishment of something fine, something well worth doing.

Before the second class period supplementary books and necessary materials for handwork had been placed at convenient locations in the room, and the pupils had begun the reading in the text. During the first half of this period, and for a short part of the next four periods, free discussion was encouraged. Had the room been visited at these times, one would have found teacher and pupils seated in groups around tables asking and answering questions. This open forum proved especially helpful to the pupils of minimum ability. Indeed, it was interesting to note that those most hesitant at first, just listeners, on the second or third day were participating freely in group discussion.

During the last half of these periods, together with three or four full class-periods, pupils worked on those parts of the unit which called for writing. Written homework was discouraged, and individuals were left free to read, plan, and create in their out-of-school time. It was during these supervised periods that the teacher became the guide or helper, moving among the pupils and giving assistance when needed, especially watching the progress and difficulties of the more timid members of the group.

Two objective tests (each of not more than ten minutes' duration) were given during the first week, not as a means of marking, but as a teaching device, to help both teacher and pupils discover difficulties which should be removed before the completion of the unit.

Reasonableness of Demand

It is difficult in an article to demonstrate the reasonableness of an assignment with respect to the time required for preparation, the facilities provided for study, and the availability of materials. Every individual and every class should have the teacher's thoughtful and sincere consideration with regard to the suitability of the work planned and the possibility of its being well done. At times, unfortunately, work must be accomplished under adverse circumstances with respect to the physical conditions for study—such as lighting, seating, and quiet. Such conditions the teacher cannot always control. Frequently, too, a teacher has to supplement by her own efforts the library materials and other materials for study. She can reduce such handicaps, however, if she knows intimately the abilities and needs of her pupils so that assignments may be adopted to their possible

achievement. The coöperation of an entire staff is needed in some schools to prevent an excessive study-load for many pupils and to guard against excessive time requirements for some particular subject. Investigations show that the assignment-load of many high school pupils is overwhelming. Teachers have no right to make demands on children which they cannot possibly meet because of insufficient time, inadequate materials, and adverse conditions for study. Too often, in the past, efforts to improve children's learning through "homogeneous grouping" and "supervised study" have been restricted to administrative measures. Too little consideration has been given to the choice and adaptation to differing pupil abilities of materials to be studied; too little effort has been made to determine the study activities required for the mastery of given assignments; and too little attention has been directed toward helping children develop the study skills needed for effective learning. During the past five years there has, however, been a steadily increasing emphasis upon the diagnosis of children's problems in study, upon the adaptation of materials, and upon training pupils in more effective study procedures.

Provision for Individual Needs

In order that teachers may have a fair chance of success in skillfully manipulating the assignment-technique, it is necessary that they take careful account of those factors which condition the successful preparation of the assignment. This makes another very rigid demand on teacher equipment. To know the child and to know him well is essential. Expert skill in diagnosis is necessary in order to discern pupil interests, attitudes, needs, and other factors which condition sound assignments. Among the data relative to the child which the teacher must have in order to plan worth-while and interesting tasks for him are the following:

1. Mental ability.
2. Physical condition including emotional stability.
3. Ability to read.
4. Social traits and tendencies.
5. Interests, attitudes, ambitions, hobbies.
6. Previous school achievement in this special subject, in other fields.

7. Home conditions—physical, educational, economic, recreational.
8. Facilities for study—at school, at home.
9. Program of work—in class, out of class, in school, out of school.
10. Methods of work.
11. Time available for study.
12. Associates, pace-makers.

Careful diagnosis makes it possible for the discerning teacher to plan wisely. Her assignments will not only include a variety of interesting, challenging tasks, but will also provide for the necessary skills for doing the tasks well. She will be able to foresee the obstacles to success and will help the pupil to devise ways and means of removing these obstacles.

Such knowledge of the individual pupil within a class group permits an intelligent differentiation in quantity and in difficulty of work; in the degree of mastery expected for a given task; or in the time permitted for its completion. It is stimulating to note the various ways in which teachers are now attempting such differentiation and to observe their efforts to provide interesting, individual activities for the less able pupil, as well as challenging opportunities for the child of superior ability. The provision for minimum, average, and maximum accomplishment given on pages 679, 681, 682 illustrates this trend.[4]

A type of differentiation is shown in this mathematics assignment:

MATHEMATICS—GRADE IX
INTUITIVE GEOMETRY

I. *Topic—Equilateral and Isosceles Triangles*

A Section	B Section (Less Mature Group)
1. Construct 4 isosceles triangles.	1. Construct isosceles triangles having:
2. Construct 4 equilateral triangles.	(*a*) Equal sides 4 inches Base 3 inches
3. With your protractor, measure each angle of the equilateral triangle.	(*b*) Equal sides 2 inches Base 3½ inches

[4] The following sources may be of help to teachers wishing further illustrations:

1. *The Unit Method of Teaching.* Virginia University, University of Virginia Record Extension Series, Vol. XIV, No. 9. 1930. 127 pp.
2. *The Unit Plan of Teaching.* Matthew Whaley High School, Williamsburg, Va. Bulletin No. 1. School of Education, College of William and Mary, 1931.
3. Wilson, Lucy. *Educating for Responsibility.* The Macmillan Company, 1929.
4. Yoakam, G. A. *The Improvement of the Assignment.* The Macmillan Company, 1932. 398 pp.

Can you find the number of degrees in each angle of an equilateral triangle without measuring? Of an isosceles triangle?

(*c*) Equal sides 6 inches
Base 1 inch

2. Construct equilateral triangles having:
   (*a*) Each side 4 inches
   (*b*) Each side 3 inches
   (*c*) Each side 2½ inches
3. Measure each angle of the equilateral triangles with protractor.

II. *Topic—Construction of a Square in a Circle*

A Section

1. Construct a square in a circle.
2. Construct another square in a circle.
3. Write directions for constructing a square in a circle.
4. Construct a regular octagon in a circle.
5. Construct a regular 16-sided figure in a circle.
6. Test your figures with compass and protractor to see if they are regular.

B Section (Less Mature Group)

(The directions for constructing a square are worked out in class discussion and are written on the board.)

1. Construct three squares of different sizes.
2. Copy directions for making a square.
3. Construct a regular octagon in a circle.

Emphasis Upon Study Procedures

Study is a series of activities which are responses to situations created by an assignment. That teachers ask children to do many things which they do not know how to do is evident in the way they prepare their assignments. It is, therefore, necessary that the teacher scrutinize carefully the array of activities planned in order that she may determine whether the pupils to whom the tasks are assigned can manipulate successfully the required skills. An analysis of an English assignment may result in a list of study activities as follows:

1. To read material on a ninth-grade level—poetry, prose, etc.
2. To use books—dictionary, reference, index, table of contents.
3. To follow directions.
4. To find specific answers to a question from a large amount of material.
5. To organize material for book reports, themes, oral topics, etc.
6. To take notes.
7. To outline.
8. To summarize.

The following diagram gives an analysis made by a science teacher of an assignment to show the study activities, needed skills, procedures, and directions.

STUDY ANALYSIS OF A SCIENCE ASSIGNMENT

THINGS PUPILS WERE ASKED TO DO	ASSUMED TOOLS, SKILLS, AND PROCEDURES NEEDED	DIRECTIONS NEEDED AND PRACTICE GIVEN
1. Read assignment-problems to get idea of purpose of lesson.	1. Read problem with understanding. Understand purpose and use of outline.	1. All problems were read aloud by teacher, with pupils looking on their own outlines.
2. Read certain paragraphs in textbook.	2. Ability to find paragraph references. Ability to read for the purpose of answering a question. Ability to read material explaining a diagram, material explaining an experiment. Use of dictionary for new scientific terms.	2. (Special training in each of these had previously been given.)
3. Find and read material in the library.	3. Know where library is, how to be excused from study-hall to go there, how to check out books for home use.	3. Class instructed as to how to find physics books in the library.
4. Observe town "water tanks."	4. Opportunity to ride through small towns in the neighborhood.	4. What to look for shown by diagram on the board.
5. Special assignment—reproduce diagrams for class discussion.	5. Ability to copy diagrams from text onto blackboard.	5. (No direction needed.)
6. Special assignment to visit creamery company and ascertain certain facts.	6. Knowledge of how to get to the plant.	6. Directions as to how to introduce themselves and whom to ask for desired information.

Is the teacher reasonably sure that each child can manipulate needed processes sufficiently well to accomplish the work assigned? Good teachers are professionally obligated to ask of themselves each time in giving an assignment, "Does each member of my group have the needed work tools, habits, and skills to do the assigned tasks?" This can be determined only by diagnosis, study, and observation made of each child under guidance. If he does not have the necessary equipment, in whole or in part, the teacher is responsible for seeing that he acquires the required skills. She has no right to ask him to attempt an activity in which he has little chance for success. This training in study procedures and methods of work is a vital part of the assignment. Acquisition of study skills should be set as a part of the assigned work when needed. This should be developed under the direction of the teacher through practice and constant checks until the pupil can use the skills in independent, unguided situations in the classroom, study hall, library, or at home. When he has demonstrated his ability to use the skills independently, then and only then has the teacher a right to include them in an assignment.

Simple, clear directions for the acquisition of skills, presented in detail, are illustrated in the assignment on "William the Conqueror," which follows. This is to make for effective learning in a drill situation. Such drill is essential for the forming of effective habits of work.

HISTORY—GRADE X

WILLIAM THE CONQUEROR

What were the important events in the reign of William the Conqueror?

References:

(not copied)

How to Prepare the Assignment (*Reported by Teacher to Supervisor*)

Each student was given a card with directions as to how to study the lesson, which he read silently as the teacher read aloud. Pupils asked any questions which they wished, to make the meaning clear.

Teacher expressed willingness to help any pupil when necessary, but *urged pupils to think well before calling for help.* She was alert, however, to give a suggestion, often in question form, *when the wheels seemed blocked in any case.*

Typewritten Suggestions to Pupils for Study

1. Read Cheyney's *Short History of England* (see front board for this and

other references) to get the story of the events. Look up any words necessary to make the meaning clear.

2. Read one or more references. (See board.)
3. Look up on map facing page 106 "William's dominions." Name them as you point them out. Name them again and *then see if you can name them without looking at the map.*
4. Read Cheyney again carefully, one topic at a time; find the most important thing in each, and write it down. Write under each anything important to explain it. *Arrange these in the form of an outline.* (Refer often to the model outline on the board if you need to.) Now study your outline carefully and critically, *to see if you can improve it in any way. Make the improvement.*
5. Looking away from your outline, *test yourself to see if you have the main events clearly in mind. Study it again if you need to.*
6. Turn your paper over and, *in a brief paragraph, summarize the main events of the lesson.*
7. Take another sheet of paper and on it *write five or six questions that you would like to ask the fellow across the aisle, to test his knowledge of the lesson.*
8. If you have time left, turn your paper over and write there the answers to the following questions. Answer as many as you have time for.
   (*a*) How did William the Conqueror save for himself his authority?
   (*b*) What valuable additions did he make to the institutions of his country?
   (*c*) What customs originated by him are still in force? In what form?
   (*d*) List, in outline form, the strong points of William the Conqueror. Do the same with Alfred the Great. Compare the two rulers on this basis.

The assignment just cited is primarily a practice exercise, valuable in initiating new habits. To function adequately these skills must be used as an integral aid to the accomplishment of actual assignments. The incorporation of such aids in an assignment is illustrated in the following selection in social studies.

HISTORY—GRADE IX

CONTRIBUTION OF THE MODERN INDUSTRIAL AGE TO CIVILIZATION

* * * * * * * * *

Average Accomplishment

Foundation of the New Age—The Industrial Revolution

The main study for the first conference will be based on the section in your textbook given to the Industrial Revolution.

Exercises[5] *in use of book*

1. What is the title of your textbook?
2. What is the author's name?
3. What position does he hold?
4. Does your book have a table of contents? State its purpose.
5. Does your book have an index? State its purpose.
6. Does your book have a list of maps and illustrations? State its purpose.
7. What is the author's purpose in writing the book as stated in his preface?

   (Put in your notebook all items marked with an asterisk [*]. See that your notes are brief, concise, neat, and ready to be handed in when called for.)
8. Find in your text the section which deals with the Industrial Revolution. How did you find it? .....
   Now read rapidly pages ..... in order to get a general idea of the development.

Vocabulary: *Definition of new terms*

1. Note Section VIII-D on your sheet of information.[6] Now define the terms:
   *Industrial Revolution
   *Define device, tool, shuttle, foster
   *Distinguish between capital and labor

Outlining

2. Find out why the Industrial Revolution began in England.
   *State in outline form the six reasons. (See information sheet VIII-A for form.)

Judgment

3. Inventions:
   (*a*) List five inventions important in manufacturing
   (*b*) List five important in transportation
   (*c*) List five important in communication

Summarizing

4. General effects of the Industrial Revolution. (Refer to your information sheet VIII-B for standards of a good summary.)
   Tell in summaries from paragraphs on pages 450 and 451 how the revolution helped each of the following developments:
   *(*a*) Colonial Expansion
   (Note that the main thought is connected with transportation—there are three necessary details.)

[5] Marginal topics in this assignment were inserted by the authors.

[6] This information sheet is given to all pupils in history and social studies at the beginning of the school year. It gives definite directions for specific study procedures and provides illustrations of correct form for outlining and summarizing. Frequent reference is made to this sheet throughout the year.

*(*b*) Democracy
(The main thought is connected with bringing people together. Three necessary details.)
*(*c*) Nationalism
(The main thought is connected with local prejudice. One necessary detail.)
*(*d*) Civilization
(Tell how inventions have advanced civilization.)
(Webster, page 452.)

Use of chart 5. Complete your chart showing conditions before and after the revolution.

Map locations 6. Map work.

Filling in a map (*a*) Mark on your outline map the principal manufacturing areas and the mining areas of the world.
(You will find a map for the above work in your textbook under the title "Occupations of Mankind." How will you locate it?)
(*b*) Notice that manufacturing areas and coal fields often go together. Why?

* * * * * * * * *

The library is, in fact, a laboratory for study activities, not in the sense of the paroled study-hall, but a place to which pupils go for needed reference materials or to engage in recreational reading. If the library is to function to its maximum efficiency it is necessary to integrate the work of the librarian with that of the classroom teacher in giving needed library instruction for using the materials which are available. It is significant that the emphasis in this instruction is shifting from the routine set-up which is ideal from the point of view of the executive-librarian to the set-up which is ideal from the point of view of the child at work in the classroom for whom the library is an instrument.[7]

Checking Results

The final measure of the success of an assignment is the quantity and quality of accomplishment in terms of the objectives sought. The checking of accomplishment is just as essential for the pupil as for the teacher. Teachers often fail to realize the satisfaction that comes

[7] 1. Scripture, E., and Greer, M. R. *Find It Yourself. A Brief Course in the Use of Books and Libraries, under the Contract System.* H. W. Wilson Co., 1927. 62 pp.
2. *School Library Yearbook, No. 1.* American Library Association, Chicago, 1927.

to the child from seeing in definite measure the results of his effort. In the present stage of educational measurement not all desirable outcomes can be objectively evaluated. Mastery of fundamental skills and informational materials can be quantitatively measured. However, the development in attitudes, emotions, ideals, and the like, must still be subjected to qualitative judgment.

The improvement of new-type tests has been of definite aid in checking the results of pupil learning. Such tests are extremely valuable in providing accurate and economical means for self-checking. Providing means for the pupil to check his own work is a distinctive feature of most modern plans for individualized instruction.[8]

An interesting scheme of checking is shown in the following assignment in home economics. The pupils in the class are learning to apply to their own work the method of the scientific rating scale. At the conclusion of an assignment which involved the planning of a meal, the work plans for execution in the laboratory kitchen, and the preparation of the meal, the pupils evaluated their work in accord with the following instructions:

HOME ECONOMICS—GRADE VIII
FOOD STUDY

* * * * * * * * *

Reporting on the Finished Meal

When you have finished all except the special assignment you may get the teacher's signature, which will mean that you are ready for practical work at your next lesson.

Your report upon the finished meal is to be prepared and handed in at the close of the practical work period.

1. Type of meal prepared. .....
2. Number of girls participating in the preparation. .....
3. Time taken to prepare. .....
4. Difficulties met during the period. .....
   (a) .....
   (*b*) .....
   (*c*) .....

[8] 1. Rochester, N. Y. *The Work of the Public Schools.* Board of Education, Rochester, N. Y., 1928. 612 pp.

2. Mitchell, E. *Teaching Values in New-Type History Tests.* World Book Company, 1930. 179 pp.

3. Stormzand, M. J. *American History Teaching and Testing.* The Macmillan Company, 1926. 181 pp.

5. Considering the purpose for which the meal was planned, what changes would you suggest if you were preparing it a second time?
   (a) .....
   (b) .....
   (c) .....
6. How do you judge yourself on the following items? Rank yourself 1, 2, 3, 4, or 5; 1 being excellent, 5 being failure.

Ability	*Rating*
(a) Ability to plan your work	.....
(b) Ability to work with your group	.....
(c) Ability to make decisions while working	.....
(d) Ability to work quickly	.....
(e) Ability to handle tools easily	.....
(f) Ability to work neatly	.....

Novelty and originality characterize the tests developed in social and civic studies in the Rochester schools. Brief illustrations from recent tests follow:

TEST IN SOCIAL AND CIVIC STUDIES[9]

* * * * * * * * *

Exercise V. Laws, principles, and theories underlying American government and policy.

This exercise is given to show whether pupils have developed an appreciation of the truth that underlying social principles are constantly affecting the development of American thought and action.

1. Here are given certain social or political principles and theories, and following them quotations from American political documents or writings that illustrate these principles and theories. After each principle or theory the pupil is asked to place the number of the quotation that illustrates it. (Principles and quotations printed on test paper.)
2. Below are given three causes in American life that have tended to develop American principles. Below these causes are given three principles or policies that have resulted from these causes. After each cause place the number of the proper principle or policy resulting.
   (a) Causes
      (1) The Fathers of the Constitution feared the growth of autocracy.
      (2) American experience has proved that when some power of govern-

[9] Rochester, N. Y. *The Work of the Public Schools.* Board of Education, Rochester, N. Y., 1928. 612 pp.

ment is divided between two officials or departments responsibility for error or wrongdoing can be shifted.

(3) American commercial interests developing world markets have been, from the beginning, drawing us more and more into the current of world politics.

(*b*) Results

(1) Many Americans believe that both principle and common sense should lead us to join the League of Nations and the World Court.

(2) A scheme of government has been devised by which the powers of government have been distributed between separate departments equally balanced in power.

(3) New York State is at present consolidating "all administrative departments, commissions, boards, and other agencies into a small number of departments giving to the governor the power to choose the heads of departments, who are to be held strictly accountable to him."

* * * * * * * * *

Exercise IX.

1. Ability to make generalizations.
   (*a*) What do you understand by a generalization?
   (*b*) If this account is typical of the President's day, what generalization can you make in regard to the way his time seems to be spent? (Program of President's day printed on test paper.)
2. Ability to analyze.
   (*a*) Below are given two political cartoons. Explain clearly and in detail the political situation which one of these cartoons depicts, choosing whichever one you prefer. (Cartoons printed on test paper.)

THE STUDY LABORATORY

In order to accomplish the many ends proposed in this discussion of directing study through the assignment, classrooms must be turned into study laboratories. The teacher and pupils should work through the assigned tasks together, gradually breaking into groups of different speed and ability levels, those who have acquired sufficient skill being "put on their own." Help should be given when help is needed; group and individual work should begin at the most effective moment. A wholesome work atmosphere should be created, making study "a thing to be enjoyed." There should be stimulation through challeng-

ing activities for the gifted child and careful supervision for the less able pupil. This laboratory procedure requires that the teacher increase her skill in discovering pupil quality and in diagnosing individual difficulties; she must learn to utilize the best available methods for analyzing conditions for study; she must be equipped with the best study techniques in her field; she must be able to apply needed remedial instruction; and she must be competent to try out, in the practical classroom situation, procedures designed to improve study. It is her business to see that every child has a chance to work to his maximum capacity. This is the study ideal toward which administrators, teachers, and supervisors should strive. Such should be the approach to the direction of study. *The key to the problem is the assignment.*

This is the second of a new series of articles on directing study, by Maxie N. Woodring and Cecile White Flemming. The first article, "A Supplementary Bibliography on Study," appeared in March, 1932. The third will appear in an early issue.

THE SOCIAL STATUS OF OCCUPATIONS FOR WOMEN

By CLARA MENGER
Teachers College Fellow, 1930-31

There is no question that the vocational preferences of girls (and of boys as well) are determined to an alarming degree by the social prestige attached to certain occupations. In the accompanying report, Miss Menger shows the ranking of these occupations in the social hierarchy. Her data furnish a basis for the interpretation of the vocational choices of girls, as well as for the inauguration of desirable measures in the educative process looking toward the correction of false social ideals about occupations. Such correction would seem particularly pertinent at this time of economic and social stress.

HARRY D. KITSON
Professor of Education, Teachers College

ALTHOUGH women have entered practically every field of gainful employment, the fields in which they are employed in large numbers are rather limited. Further, as is true of all workers, their employment in certain fields accords them much higher social standing than does employment in others. Although the social status of occupations may not be an important factor in seeking employment, especially at a time of depression and much unemployment, it undoubtedly is a very important factor underlying choice of and preparation for an occupation. Before seeking training in an occupation some choice must be made, and it is then that the social rewards are balanced against more tangible rewards. Among girls the social standing of the petty office clerk undoubtedly far outweighs the more remunerative occupation of factory operator, just as with young men the occupation of bank clerk is popularly known as poorly paid but socially acceptable.

Counts verified his belief in the influence of the social status of an occupation through a research.[1] He listed forty-five occupations

[1] COUNTS, G. S., "Social Status of Occupations: A Problem in Vocational Guidance." *School Review*, Vol. 33, No. 1, pp. 16-27, January, 1925.

and had them ranked by four hundred and fifty judges. He found that certain occupations received a much higher social rating than did others, indicating that individuals regard professional occupations more highly than the trades because of the social prestige that is attached to the former.

Reference to Counts's list, however, reveals that few of the occupations listed are employments for women, and none of them are rated from the standpoint of their social value for women. Lehman and Witty have pointed out that there are strong sex differences in attitudes toward the social standing of occupations.[2] They conclude that the "sex difference is undoubtedly due to the fact that the children [making choices] tended to respond to the quiz partly in terms of the vocations which were uppermost in their mind." Since women have in mind but a limited range of employments, it would seem reasonable to expect that the relative social status of occupations for women would be affected by the nature of the occupation for which they are eligible.

It is the purpose of this investigation to determine the social standing of occupations that are popular as choices and employments for women by the same method that Counts used in his investigation. A comparison will also be made between these ratings and those made by the raters in Counts's investigation. By doing this it should be possible to determine whether these occupations are given the same or different ratings when ranked by different groups of judges. In other words, do the occupations that girls enter form a social hierarchy acceptable to all groups?

This investigation suffers from the same limitations that were present in the research of Counts. First, it deals with opinions that are wholly subjective, dependent upon the feelings and moods of the raters, who are not well acquainted with some of the occupations. But the determiner of social status *is* opinion—opinion of those unqualified as well as those qualified through knowledge and experience, to venture opinions. Hence we are bound to use them in ascertaining conditions.

Another weakness of this investigation rests in the number of occupations to be ranked. Even though the number was smaller

[2] Lehman, Harvey C. and Witty, Paul A. "Further Study of the Social Study of Occupations." *Journal of Educational Sociology*, Vol. V, No. 2, pp. 101-12, October, 1931.

than it was in the investigation by Counts, it was too large for an accurate weighting of all the factors that give an occupation social standing. This was especially true in the case of the part-time and continuation school students, whose general ability is relatively low.

The third weakness described by Counts is also present in this investigation. The judges in many cases ranked the occupations under idealized conditions rather than under the actual conditions of employment. This was especially true of occupations at the upper levels.

In spite of the weaknesses of this type of investigation, it is valuable because there is need of information regarding opinions concerning the social standing of occupations. If society ever brings about a satisfactory balance between the number of employments and the number of persons seeking entrance into employments, it must attempt to control the social standing of occupations. Such control should be based upon an understanding of the attitudes at present in vogue.

In order that the results of this investigation might fairly represent the opinions of people in general regarding the social status of the occupations of women, the judges were drawn from widely diversified groups. They included both men and women, juniors and adults, workers and students, teachers and workers in other professions and occupations; they lived in different sections of this country; a few were foreigners studying here. In all, seven hundred and four persons acted as judges.

A list was compiled consisting of thirty-five occupations that were elected as popular by a large number of girls. This list was submitted to each judge, who was asked to rank the occupations from 1, the highest, to 35, the lowest. The following shows the sheet as submitted, including the list of occupations and the directions that were given the judges:

THE SOCIAL STATUS OF OCCUPATIONS FOR GIRLS

In most communities certain occupations are accorded a higher rating than others. There is a tendency for us to "look up to" persons engaged in some occupations and "down on" those engaged in others. We may even be ashamed or proud of our relatives because of their occupations.

In the following list are thirty-five occupations in which girls and women

find employment, which you are asked to arrange in the order of their social standing in your eyes. After that occupation which you regard highest socially, place the number "1," and so on, until finally you place the number "35" after that occupation which you rate lowest. You will find it easy if you first arrange on a separate sheet of paper the thirty-five into seven groups of five occupations each, placing the five highest in the first group, the next five in the second group, etc. Then you can arrange the five in each group in their proper order and finally transfer your rankings to the column below.

Occupation	*Rank*
Actress (having a speaking part)	.....
Beauty Operator (does not own shop in which she works)	.....
Bookkeeper (works in office)	.....
Buyer (for large department store)	.....
Cashier (in restaurant or motion picture house)	.....
Clerical Worker (general office clerk)	.....
Comptometer Operator (in office)	.....
Cook (in cafeteria)	.....
Dentist (practices dentistry)	.....
Dietitian (in hospital or hotel)	.....
Dressmaker (does not own shop in which she works)	.....
Elementary School Teacher (teaches in city school system)	.....
Factory Operator (runs power machine in factory)	.....
High School Teacher (teaches in city school system)	.....
Homemaker (in one's own home)	.....
Houseworker (does general housework in private home)	.....
Laundress (does family washings in home)	.....
Lawyer (practices law in court)	.....
Librarian (in public library)	.....
Maid (light services in home)	.....
Milliner (does not own shop in which she works)	.....
Model (in large department store)	.....
Musician (plays some instrument for profit)	.....
Nurse (works in hospital)	.....
Personnel Worker (in large store)	.....
Physician (practices medicine)	.....
Saleswoman (in large department store)	.....
Scrubwoman (cleans large office building)	.....
Secretary (private secretary to a business official)	.....
Shop Owner (specialty shop)	.....
Social Worker (doing relief work among poor)	.....

TABLE I

Occupations for Girls Ranked According to Social Status

Occupation	Median Score	Rank	Points in Interquartile Range
Physician	2.4	1	2.7
Lawyer	2.9	2	3.0
Dentist	3.9	3	4.8
High School Teacher	5.5	4	3.8
Elementary School Teacher	7.9	5	5.8
Secretary	9.4	6	6.1
Dietitian	10.7	7	7.8
Nurse	11.3	8	8.2
Buyer	11.4	9	7.9
Social Worker	11.5	10	10.0
Librarian	13.0	11	6.1
Musician	14.3	12	10.2
Actress	14.6	13	13.0
Personnel Director	14.7	14	10.1
Bookkeeper	15.4	15	7.5
Homemaker	15.6	16	20.9
Shop Owner	15.8	17	7.8
Stenographer	16.7	18	7.6
Comptometer Operator	18.5	19	8.0
Clerical Worker	19.2	20	7.0
Typist	19.7	21	7.9
Saleswoman	21.9	22	7.4
Milliner	23.2	23	5.9
Telephone Operator	23.7	24	8.3
Dressmaker	23.9	25	7.7
Beauty Operator	24.22	26	6.4
Model	24.23	27	8.7
Cashier	25.5	28	7.5
Cook	29.5	29	6.4
Factory Operator	29.7	30	6.1
Waitress	30.7	31	4.1
Maid	30.8	32	4.1
Houseworker	31.5	33	3.2
Laundress	33.6	34	2.7
Scrubwoman	35.0	35	0.9

Stenographer (works in office) .....
Telephone Operator (works in large city exchange) .....
Typist (works in office) .....
Waitress (in a large restaurant) .....

You do not need to write your name. Please indicate only:
School or Organization with which you are connected .....
Location.....
Male ..... Female .....

After the sheets were returned the median score for each occupation was determined. On the basis of these median scores, the occupations were ranked. The ranking of the thirty-five occupations for girls based on the composite opinion of the 704 judges is shown in Table I.

In Table I we note that physician ranks highest in social standing as an occupation for women; lawyer, second; dentist, third; and teacher, fourth and fifth. Homemaker ranks sixteenth and scrubwoman is decidedly last.

It is interesting to compare the rankings of the occupations of Counts's scale with those of the scale of the present study. Eight occupations appear in both scales. They are listed in Table II.

TABLE II

RANKING OF OCCUPATIONS ACCORDING TO COUNTS'S SCALE AND ACCORDING TO THE SCALE OF THE PRESENT STUDY

OCCUPATION	RANKING OF OCCUPATIONS			
	Counts's Scale (45 Occupations)	Order	Scale of Present Study (35 Occupations)	Order
Physician	3	1	1	1
Lawyer	5	2	2	2
High School Teacher	10	3	4	3
Elementary School Teacher	13	4	5	4
Bookkeeper	21	5	15	5
Salesperson	29	6	22	6
Factory Operator	37	7	30	7
Waiter-Waitress	41	8	31	8

Although these occupations receive different rankings on the two scales, it will be noted that they take the same relative order on both scales.

The next question concerns the amount of agreement among the groups of judges who served in this investigation. This was determined by correlating the rankings of one group with the rankings made by another group. Since most of the correlations approximated .90, and since the P.E.'s were small, ranging from .050 to .002, it may be said that there is real agreement in the ranks given by the different groups, and that there exists a social hierarchy of occupations for women.

A more careful scrutiny of the ranks given by the various groups showed that the smallest amount of agreement occurs in the rankings of the homemaker. Table III shows the ranks given to homemaker by the various groups.

TABLE III

RANK GIVEN "HOMEMAKER" BY EIGHT GROUPS OF PERSONS

GROUP	RANK GIVEN HOMEMAKER
Male	6
Part-time Students, Michigan	31
Continuation School Students, New York	28
Hebrew Technical School for Girls (seniors)	28
High School Students (seniors)	14
Teachers College Students	5
Graduate Students, High School of Commerce, Detroit	14.5
Miscellaneous Adults	5
Total Group	16

Analysis of these figures shows that the groups that ranked the homemaker high are older and more conservative, while the groups that ranked the occupation low are younger and less conservative. Male opinion tends to raise the rank of the homemaker. This is particularly evident in the higher standing of the homemaker in the two young groups, the high school seniors and the graduate commercial students, which are both mixed groups. Although there were but few boys in these two groups, they were consistent in rank-

ing homemaker very high. Further research is necessary to establish the differences in the ranking of this occupation for women by boys and girls.

It may happen that there is agreement between groups but much disagreement among the individuals of a group. In order to discover the agreement among the individual judges, the interquartile range for each occupation was computed, that is, the range within which the middle 50 per cent of the individuals agreed upon the ranking of the occupations. (See Table I.)

Reference to these figures shows that the occupation of homemaker has the greatest variability—50 per cent agreement within 20 points on a 35-point scale. That of scrubwoman has the least variability—50 per cent agreement within .9 points. Actress, musician, personnel director, and social worker show high variability, while laundress, lawyer, and physician have low variability. From the high correlations in the ranking of the occupations by the groups, we note that there is a high degree of agreement in the ranking of occupations by groups, but the scatter indicated in the interquartile range figures shows much disagreement in the ranking by individuals.

Summarizing the findings of this investigation, we note that there is consensus among the different groups of judges regarding the social standing of the occupations for women, with that of physician ranked highest and that of scrubwoman, lowest. The occupation of homemaker takes an average position in the social hierarchy. This average position is derived from a very high rating by some groups and a very low one by others, and there is much disagreement among individuals as to its standing among other occupations.

In the difference of opinion regarding the occupation of homemaker, there is offered a real challenge to educators. Several questions arise that need solution. Why do many of the young women rank homemaking very low, in fact, often among the lowest unskilled jobs? Are the schools in any way responsible for this? Can the schools aid the girl in intelligent anticipation of the work as homemaker? Do the extremely low ratings by young girls intimate the presence of antagonistic feelings toward the occupation? If antagonisms are present, the schools should be interested in the causes. Does the greatest social good result from such wide discrepancies in ranking by different groups? Can the schools in any

way reduce the discrepancies in ranking of this important occupation for women?

In view of the clear lines of demarcation which society draws in its thinking regarding occupations for women, it may be desirable to set in motion influences that will correct this condition. Certain worthy occupations unquestionably suffer seriously from this subtle social discrimination. The force of social standing is always difficult to combat, but before harmonious vocational balance is attained, workers must make the adjustment between the social standing of the occupation and their own personal participation in it. It would seem that there are two ways in which society, through its schools, can bring about this adjustment: (1) It can educate the individual so that he can engage in some phase of a lofty occupation to which he aspires; or (2) it can raise the social standing of the lowly occupations. In the former the phase of the lofty occupation may be either some little routine job or the most important responsibility in the occupation, depending upon the capacities of the individual. The latter (raising the social standard of lowly occupations) has been accomplished in the past by extending and intensifying the training for the occupation, and thereby, through standardized certification, raising the standards of the vocation. Such has been the case in the profession of medicine. Once the profession of the common barber, to-day it stands among the highest of the professions, with a long and complicated system of training, and high professional standards. A similar evolution is occurring in the commercial occupations. Society needs to control this factor of social status, and it is hoped that the assembling of facts regarding the social hierarchy of occupations will constitute the first step in a workable plan of control.

GENERAL SCIENCE IN THE JUNIOR HIGH SCHOOL (*Concluded*)*

By THOMAS H. BRIGGS
Professor of Education, Teachers College

THE TEACHING OF GENERAL SCIENCE

THE teacher of general science in the junior high school needs to be a scientist rather than a specialist. It is assumed, of course, that he should have a foundation of knowledge as a result of formal training; but in addition he should have acute curiosity and wide interests in a great variety of things scientific. If he has these, he will be a growing person. A static teacher has no place in a classroom, especially teaching a subject so rapidly developing as science. It is often stated that one objection to general science is the difficulty in securing teachers who know enough to present the subject; but any man or woman with a sound basic training, curiosity, and wide interests can acquire enough knowledge to lead youth into learning.

The teacher should have a penetrating knowledge of boys and girls in the early adolescence period and should have a keen liking for them. If he has these, he will be able to understand their points of view, to begin with understanding their activities, interests, and needs, to sympathize with their shortcomings, and to progress with them according to their immature powers. Whatever efforts are made to improve articulation between the elementary grades and the junior high school, there is inevitably need of gradual and, to the adult mind, slow introduction into new subjects. The phenomena and apparatus are often strange and the technical language difficult. Much of the success of a science course depends on an introduction that is interesting, possible of success, and satisfying to the children.

The teacher must also be adaptable, not only to the boys and girls in his class but also to the principles underlying the junior high school. It is very difficult for many teachers who have been well

* The first part of this article appeared in the April issue of the RECORD. This presentation is by a student of general education and of the junior high school, but never a teacher of science.—EDITOR.

trained in traditional science courses or who have taught successfully by traditional methods in other schools to appreciate the necessity of adapting both the subject matter and the methods to the ideals and requirements of intermediate education. If a teacher is indurated by habit or by prejudice he has no place in the new type of school. Unless he is, or is made, adaptable, he is likely to be a serious obstacle to the accomplishment of the objectives for which the school was established.

CHOICE OF SUBJECT MATTER AND ORGANIZATION

The subject matter of general science should be determined by application of the principles advocated elsewhere in this article.[1] Inventories should be made of the uses of science that boys and girls and adults, such as they soon will become, actually make, and of higher activities which can be introduced and made satisfying. In attempting this it is peculiarly necessary that the scientific attitude of open-mindedness be maintained, for there are many uses and needs, common or possible of establishment, that have hitherto been largely neglected in courses. There should be prejudice neither against anything that has been taught nor against anything novel: every topic should prove its right to be taught. When as large an inventory of uses and needs as possible has been made independently, then and only then should reference be made to textbooks and to other courses of study to find desirable topics that may have been overlooked. The items in this composite list should then be weighted, perhaps in five steps, as to their importance—some will seem absolutely necessary, some desirable, and some of small importance. Then for grade placement judgment can be made as to the difficulty, and other qualifying factors—such as the interest of the teachers and the availability of equipment—can be introduced.

The objectives of general science previously stated and discussed in this article should enable any committee easily to find topics desirable for treatment in a general science course. Such topics should contribute to utility, to appreciation of the wonders and the work of the world, to avocational activities, to pleasurable social contacts, to desirable scientific attitudes, and to preparation for later more specialized study. The more of these objectives to which a topic con-

[1] See first part of this article in April RECORD.

tributes, of course, the more important it is in the curriculum. Every one should be of assured or of highly probable value, so that each pupil will have the best possible training for a satisfying and effective life.

The organization of the selected topics should be made in the light of the pupils' immature and relatively narrow range of information, of their interests and needs, and of the facilitation of teaching effective for the accepted objectives. This is in marked contrast to the too common organization in terms of subject matter. Although highly logical, the more conventional organization is often not appreciated even by teachers and seldom, if ever, by pupils as young as those for whom we are providing. When attempting to climb a mountain an amateur encounters numerous obstacles—brush, trees, boulders, valleys, and crevasses; only when at the top can he look back and see the well-marked trails. In the junior high school, pupils must be helped to find their way from where they begin before they can appreciate the paths made by experienced specialists.

As a matter of fact, the logical division of science into physics, chemistry, biology, and the like, or of physics into heat, light, electricity, and machinery, is nowhere important except in the traditional secondary school and college curricula. Even the advanced specialist frequently, if not usually, works on a problem that freely transgresses narrow fields; nearly half of the papers presented in any one year at the meetings of the American Association for the Advancement of Science draw on two or more "subjects," and more and more we hear of astrophysics, biochemistry, and similar combinations. Practical scientists and inventors never abandon a problem because it leads out of a special field; and the demands of life come without regard for academic subject divisions. The preservation of food, for instance, may involve at least physics, chemistry, and bacteriology.

A seeking to achieve the objectives of general science in the intermediate school must largely disregard all artificial divisions into specialized fields of subject matter—rather, it should draw from all of them for the satisfaction of the immediate and most probable future needs of beginning pupils. Few other subjects can so effectively use the project. General science should begin every unit of study with a "felt need"—that is, one which the pupils realize or have been

led to realize to be important in specified ways to them. They need to know how to select their food wisely, how to understand the weather, how to appreciate the miracle of the internal combustion engine, how to pursue an interest in butterflies. To do these things they consider methods of procedure; after evaluating them they choose one; they learn of sources of information, acquire skill in using them; and finally, by methods which become increasingly habitual, they achieve the satisfactions of solving problems which they recognize as worth while.

This is superficial learning, perhaps, as a few specialists have objected; but that is the only kind for which children have competence. As rapidly as possible they should be prepared to satisfy the needs which life will assuredly bring. Those pupils of unusual promise are likely to continue in school long enough for specialized and profound study. The probability that they will continue in school and that they will elect advanced courses in science is increased by the success of general science in satisfying needs of which they are conscious and in setting up interests and favoring attitudes. That guidance by self or by teachers may be effective, the general science course should continuously make pupils aware of the special sciences in which they can find more and advanced work of the kind that has proved attractive.

METHODS OF TEACHING

The methods of teaching should be simple, of course, adapted to the immaturity of children. Junior high school pupils beginning a new subject like general science encounter difficulties, especially in reading the textbooks in common use. Technical terms like *protoplasm, energy,* and *photosynthesis,* which are in the daily vocabulary of scientists, appall almost every child. He can and will learn to use them with facility, of course, but the introduction must be carefully made; he needs first to understand the phenomenon, then to hear the word, see it, spell it, and pronounce it aloud before the sense of embarrassment leaves. The style, too, of many textbooks is, unfortunately, difficult, especially in passages that are highly condensed. Consequently, teachers need to translate and materially to amplify such passages. We have apparently not yet learned that the small textbook with its condensed exposition is often the most diffi-

cult. There is difficulty in the use of the strange, even though simple, apparatus of the laboratory. Many teachers fail in effectiveness because they do not at the very beginning, approach the subject with the simplicity that insures success and guarantees satisfactions, both necessary for the attitudes that favor advancement. Some, on the other hand, too long continue a simplicity that offends pupils able to conquer greater difficulties. The ideal is to keep the traces tight and the maximum possible load moving.

Valuable suggestions for methods in general science may be had from observing the hierarchy of questions that people ask about new phenomena.[2] Generally the first one is "What is it?" There is a tremendous satisfaction in names; we want to know who the stranger is, what bird perches by the window, what constellation has three stars evenly spaced in a row, what to call the instrument that mixes the gasolene vapor with air for the combustion chamber, what is the flower that "cheapens the redbird's array." This satisfaction general science should give for the commonest things in the natural world; but it should not stop with that, as so many people are content to do. It must lead on to other and more significant questions, some of which children will not ask for themselves. But merely giving things names, common or scientific, satisfies a human felt need, and so is important. If it also furnishes a classification—Venus is a planet, Sirius a star—and reifies an abstraction, so much the better.

A second naïve question is "What is it for?" The answers of immediate utility are commonly given: the pistil and the stamen act thus and so in fertilizing a flower, the flash from a spark plug fires the gasolene mixture, the lever increases men's power. But the more subtle uses of natural phenomena it is also important for pupils to understand: the value of minor though essential details, their articulation in the hierarchy of the whole, their stimulus to intellectual activity, and their contribution to aesthetics. Much of astronomy comes under the last two heads. General science should give answers to this question, too, and extend it beyond what the pupil without direction could possibly perceive.

The third question in the natural order is "How does it work?" This ordinarily means only "What is the principle of operation?"

[2] See Briggs, Thomas H. "Naïve Questions and Science Teaching." *School Science and Mathematics*, 23:34-40, January, 1923.

Everyone has some curiosity to learn which knobs to turn in tuning a radio receiving set, which pedal to press to start the engine, and how to focus a telescope on a star not visible to the naked eye. All such information is valuable; indeed, only a small fraction of mankind demands anything beyond it. One large value of science teaching is that, after giving an answer to this question—and not before—it extends curiosity so that a desire and need are felt for something more.

Closely related to this is a subordinate question which instinctively follows: "Can I work it?" Psychology has taught us to recognize the satisfaction that comes from activity and from feeling oneself a cause. Everyone feels his fingers tingle to attempt the knot that is obdurate to another; everyone desires "to make the wheels go round." In any industrial exhibit the greatest crowd is likely to stand around some machinery that anyone can start running even by so simple an operation as pushing a button. Advertisers and exhibitors have taken advantage of this phenomenon of human psychology, and so should teachers. Whenever possible, pupils should be permitted and encouraged to "monkey with" and to manipulate specimens and apparatus. The lighting of a Bunsen burner, the precipitation of a suspended solid, the decanting of a liquid, the dissection of a flower, the running of a centrifugal machine—all such things should be entrusted to pupils when they do not seriously interfere with class progress. The pupils may not do them as well or as expeditiously as the teacher, but by doing them they acquire satisfactions that facilitate interest and result in more work and greater power.

The fifth question, which naturally follows the preceding four, is "What causes it to work?" Stated somewhat more formally, it is "What is the underlying principle explaining the phenomenon?" An answer to this question is of course essential for what we ordinarily call education, but it should be noted that the great majority of people are content with much less. One may merely press a button and produce a flood of light, turn a steering wheel to round a corner, with no knowledge of the differential, plant and harvest beans in ignorance of cotyledons, and marvel at the brilliance of heavenly bodies in aesthetic richness and intellectual poverty. The science teacher consistently aims at explanation in terms of principles, and undoubtedly he should do so; but frequently he attempts this too soon, without an-

swering the simpler and more common questions that are natural in the workings of the human mind. With such answers as a foundation it seems probable that immature pupils could be led to greater curiosity concerning explanatory principles and to more eagerness for them. Principles should grow out of acquaintance with phenomena and interest in them, and after explanation and establishment they should be given as numerous applications as possible to stamp them into memory and to insure wide usefulness.

The final question in the hierarchy is "What further application has this principle than is now known?" This leads to invention. Scientists have now a set of principles explaining the constitution of the atom, the bombardment of the earth by cosmic rays, and the production of gamma rays, for examples; but it remains for some genius to apply the established principles so as to produce some new satisfactions to mankind. Although this question is just as "natural" as the others that have been stated, it is asked only by advanced thinkers. The gap between it and the simpler preceding ones may be no greater for a science teacher than that between asking *how* something works and the theoretical explanation of it. Appreciation of this should give teachers more sympathy with the lack of interest that pupils often show in the principles of science and with the difficulty that they have in grasping them. If primary questions are answered first, higher questions may be more easily developed and the answers more eagerly and intelligently sought.

In all science teaching, questions should be invited, encouraged, and respected. Even though they for the time divert the class from the plan made by the teacher or the authors of the course of study, they should be answered in such a way as to give satisfaction, to incite further curiosity, to lead to further study, and to establish the habit of asking questions. It is from questions that the best and the largest amount of true education comes. Kipling's elephant's child would never have progressed had it not had an insatiable curiosity. The rhyme at the end of the story is worth quoting.

> I keep six honest serving men;
> (They taught me all I knew)
> Their names are What and Where and When
> And How and Where and Who.
> I send them over land and sea,

I send them east and west. . . .

* * *

I know a person small—
She keeps ten million serving men,
Who get no rest at all!
She sends 'em abroad on her own affairs,
From the second she opens her eyes—
One million Hows, two million Wheres,
And seven million Whys![3]

If, as is sometimes charged, formal education decreases the curiosity evidenced by questions, and substitutes the deadening satisfaction of abstract knowledge, surely it has failed in an important function.

In the teaching of general science in the junior high school there should be much oral exposition and, with pupils' aid, demonstration. It goes without saying that this should concern phenomena of assured importance, justified by their contribution to one or more of the approved objectives, and that it should be so unmistakably clear that the pupils will understand all essential details. But more than this, it should be interesting. Interest may result from the teacher's obvious enthusiasm, from the manner of the telling, from emphasis on the dramatic elements, from exhibited specimens and illustrations, from application to felt needs, or, for some, from a satisfaction of an intellectual desire to know. However caused, it is at this introductory stage essential. When created it should be directed and by every means possible strengthened until it will carry on of its own momentum. It can be turned to a repeating of the experiments and to the performing of new ones, to study of the text and wide supplementary reading, to independent observation, to field trips, to museum visits, or to construction, though the last is popular only with a small number who are especially skilled in handwork. If experiments are to be repeated, preferably at home, the apparatus used must be simple and easily procurable. The first readings must be very definitely suggested in books or magazines that are easily available and of such nature that they will assuredly give pleasure as well as valuable information. Observation should be carefully assigned and of a kind most likely to give results; for example, "Watch a robin's nest for an hour and estimate how many linear feet of food each one of the

[3] KIPLING, RUDYARD. *Just So Stories*, page 85. Doubleday, Page & Company, New York, 1926.

young consumes in a day." And, similarly, trips to the fields or to museums and construction should be so prepared for and directed that the results will be of assured interest and value in the judgment of the pupils. Exposition or lectures by others, especially by those who are recognized as having had unique experiences or unusual knowledge as well as ability to talk, may occasionally be used with profit.

Careful studies by students of education have shown that laboratory work by pupils is less valuable than most teachers have thought and than practice assumes. Whether this is the result of the kind of laboratory exercises used or of the superiority of the methods of oral presentation or of textbook study we do not with certainty know. It does seem wise, however, either to improve laboratory technique or to reduce the number of the exercises. Those that are used should be simple, usually requiring only such apparatus as is common in the experiences of the children. Complicated, expensive apparatus has no place in the junior high school; but models, such as that of a steam engine, which show in a simplified way the working of a complex phenomenon may be highly useful. Much of the laboratory work required in school should be such as can be repeated and extended at home by the pupils. Meister has shown[4] that mechanical toys are of great value.

It seems reasonable and consistent with what psychology teaches to expect that directed activity of the pupils with machinery and natural phenomena should increase their appreciation and their ability to manipulate, observe, and use them better, providing the activity is the same as or closely similar to what is demanded for life satisfactions. As previously stated, many laboratory exercises follow anything but the scientific method. In experimentation pupils are usually more interested in what happens than in the causative principles. Good teaching must insure the continuation of interest to the ends for which the exercise was devised and assigned. Pupils who, before undertaking a problem, understand clearly what it is designed to show, and who appreciate the importance and value of the objective are most likely to achieve it.

An abundant use of illustrative pictures, still or moving, is advo-

[4] MEISTER, MORRIS. *The Educational Value of Certain After-School Materials and Activities in Science.* A. M. Porter & Co., New York, 1931.

cated. That pupils are attracted by pictures, of almost any kind, is evidenced by their preference for books that are illustrated and by the avidity with which they seek newspapers and magazines with an abundance of pictures. This natural interest should be utilized in science teaching and directed to more effective results. It is doubtful whether the highly illustrated science magazines teach much science, but it is incontrovertible that they have an absorbing interest for most youths.

That pictures may be used effectively the teacher must first decide just what he wishes to achieve and then with great care select what will assuredly contribute to the objectives. Although children like to look at pictures, they do not always see the significant features. If they understand and accept a problem they can then be led to search for details that help in its solution. Pictures can be used to create an interest, and after it is by other means developed they can be used again to make abstract ideas concrete, to clarify what is vague, and to synthesize details into a whole. With boys and girls the teacher will need to insure careful observation, understanding in terms of the accepted problem, and appreciation by means of informal questioning and discussions.

Pupils will often, at a suggestion, make a remarkably fruitful search for illustrations that are needed in class and sometimes will reveal much ingenuity in original drawings. The greater their intelligent activity, the greater their interest. The pupils themselves may present still or moving pictures to the class. In preparation for this, almost any pupil will do an amount of study far beyond the usual and will learn to look at pictures with a care and thoroughness that he has never before known. Another advantage of having a pupil supply an explanatory commentary to a projected picture is that the semi-darkness in which he stands relieves him of much self-consciousness, and thus makes possible concentration on the task of being clear, interesting, and otherwise satisfying to his audience. The questions that they ask will reveal inadequacies in his exposition much more convincingly than the red ink of the English teacher ordinarily can.

Pupils should also be taught to read and to use graphs and charts. With these devices for clarity and vividness the mathematics department can coöperate effectively. Both devices occur so frequently in

newspapers, magazines, and other forms of popular reading that everyone should know how to read them completely and interpret them accurately. More than this, pupils should be taught to find and to consider the implications; almost every graph or chart can raise more questions than it answers, and the habit of looking for such stimuli to extensions of knowledge and consequent intelligent activity is desirable in any educated person. Pupils are usually interested and often very industrious and clever in collecting or in making graphs and charts to illustrate and emphasize what they have learned. Efforts in this direction will insure that both devices are understood and appreciated.

General science in the junior high school should generously employ excursions to fields, woods, museums, and industries where actual examples may be found of phenomena studied in class. Seldom is the excursion economical merely as an initiation of interest. It must be prepared for with the greatest care, and it is highly desirable that the teacher and a small group of pupils, who will later act as his assistants, go over the ground beforehand. Few other activities are so disappointing and wasteful as the field trip that fails to find what it set out to seek; consequently, there should be assurance of success or some alternative in readiness.

In preparation for a field trip of any kind some motivation should be given. This may result from the normal study of the text, from an exhibited specimen or model, from a selected reading, from a report—preferably by a pupil in a former class—or from a lively exposition by the teacher. After the questions that pupils raise are considered, a short list should be agreed on that all feel the trip should help the class to answer. Usually they should all center around one, certainly around not more than three, definite phenomena, which will be the focus of attention. On the trip it should be the serious business of the class first of all to find and to record answers to the prepared questions. Other questions that arise can be answered on the spot or reserved for future consideration. After return to the school reports and discussion should follow to clear up misunderstandings and to insure that every pupil has at least the definite information that is needed. All special interests should be encouraged and built up by directions toward further study, reading, observation, or construction, either by individuals or by groups. Any

reports that they may make to the class as a whole are a proper recognition of their industry and are likely to prove rich in information as well as stimulating to their fellows to attempt similar kinds of supplementary work.

Projects in their best sense are peculiarly suitable for use in general science classes. The organization of the subject very easily can be made in project units, each of which is composed of several minor ones. This means simply that a problem, however proposed, is whole-heartedly accepted by the pupils as worthy of their best effort to solve. It may be why an engine fails to work, why some white chickens are hatched from the eggs of a black hen, why coal is found in veins, or how to prognosticate the weather. Accepting the problem as their own and fully understanding it, the pupils then share in proposing, evaluating, and selecting the best means of solution. On this approved program they work as individuals or in groups on the part assigned to them that they may make an acceptable contribution to the group need. For those with unusual or special interests a science club can be formed. The program of the Boy Scouts and of similar organizations can well be used to supplement and extend the ordinary class work.

A method of teaching general science that offers tremendous possibilities and yet has been little used is the encouragement and direction of the reading of popular literature in the fields of science. Curtis showed[5] that such readings result in the accumulation of a mass of information equal to that acquired by the study of the usual textbook and in even better scientific attitudes. It is not here suggested that the readings supplant the textbook, but that they supplement it. Teachers of English and of history should not be permitted to monopolize this activity; the supply of science literature is too vast and valuable to be neglected. Extensive reading in it is interesting to boys and girls partly because the author must write attractively to insure the success of his publications and partly because they find a relief in turning aside from "schoolbooks." It not only supplies an abundance of facts and reveals the scientific method at work, but it also clarifies and emphasizes what has been studied, presents new topics and additional facts and their application, opens

[5] CURTIS, FRANCIS D. *Some Values Derived from Extensive Reading of General Science.* Contributions to Education, No. 163. Bureau of Publications, Teachers College, Columbia University, 1924.

up new fields of interest, and tends toward establishing habits which will contribute to the pleasurable and profitable use of leisure time.

To initiate such readings the teacher can tell of a fascinating article or book, read orally from it a passage sure to command attention and likely to create an appetite, exhibit specimens that he has collected and tell where information may be had about them, or even recount a part of the biography of one of the many scientists who have lived dramatically and achieved greatly. If he then makes available the magazine or book containing the story, especially if he indicates an assuredly interesting section that may be read first, he is likely to stimulate at least some of the class to attempt it. Every success that they have stimulates others, for interest is "catching."

With the consent of the librarian, written or typed slips like the following may be posted on the bulletin board or pasted on the inside cover of library books: "Do you know anything of the most interesting wild animal in America? See Warren's article in *Scientific Monthly*, July, 1928"; "Anemonies reproduce in five different ways, which William Beebe explains in the *Atlantic Monthly*, July, 1928"; "Why do not animals increase so fast as to be a menace? Some fish lay 5,000,000 eggs. See Henshaw Ward's *Evolution for John Doe*, pages 77-85."

Instead of formal written reports on such readings, it is far better to have an informal discussion with individual students, listening quietly, answering some questions, raising others, and encouraging more reading along the same or similar lines. Occasionally some pupil who has read well and has enthusiasm may be called on to make a report before the class or in assembly regarding a topic on which he has become something of a specialist. The resultant κύδος is likely to spur him on to further activity and to incite ambition in other pupils for similar honor.

CONTRIBUTIONS TO INTERMEDIATE EDUCATION

Thus planned and taught general science makes important contributions to achievement of the special functions of the junior high school. It continues the integration of the future citizens by giving them similar information and interests. It satisfies their immediate and their most probable future needs, extending the list far beyond what any specialized science ever attempted. It explores interests,

aptitudes, and capacities so that guidance may be more intelligently given as to future study most likely to be successful and profitable. It reveals the several kinds of wealth in the field of science, specifying the special subdivision in which further satisfactions can be found, and attempts to make it so desirable that the students will ardently seek in higher schools or independently what they consider most attractive and most profitable in living a full and complete life. And, finally, it facilitates starting each pupil on the type of special study for which he seems best fitted.

GUIDES TO EDUCATIONAL LITERATURE IN PERIODICALS

INDEXES, ABSTRACTS, BIBLIOGRAPHIES

By ELEANOR M. WITMER
Librarian, Teachers College
AND MARGARET C. MILLER
Library Assistant, In Charge of Periodicals, Teachers College

DURING the past twenty-five years the amount of printed information dealing with educational problems has increased rapidly. At the present time more than one hundred journals pertaining to education are being published in the United States. Many lay magazines are also devoting space to the discussion of various phases of the educational situation. These periodicals, whether lay or professional in character, form one of the chief sources of printed information about educational developments and tendencies, and their content is therefore of distinct importance to all students and educators.

Indexes and other guides are essential for the accurate and systematic use of this great mass of periodical literature. These tools are the basis for carrying on research and study and as such are equally valuable to educators in service or in training. A knowledge of their scope, arrangement, and purpose will aid workers in the skillful and effective use of them.

The following article forms: (I) an annotated bibliography of the most important indexes to educational periodical literature with suggestions on how to use them; (II) sources for securing abstracts and digests of the more significant articles published in current journals; (III) a guide to lists of educational periodicals.

I. INDEXES

Only those indexes most frequently consulted by educators, students, and research workers in the field of education are listed below. Other special indexes will be useful and needed in special instances. For a complete list of indexes, with descriptive notes, consult Mudge's *New Guide to Reference Books*.[1]

[1] I. G. Mudge. *New Guide to Reference Books* (5th ed.). American Library Association, Chicago, 1929. Annual supplements are available.

Before consulting any of the indexes it will be expedient to follow certain steps:

When seeking material on a given subject—

(1) Consider the period of time the subject covers.
(2) Check the chronological table (page 724) to determine which indexes cover that period.
(3) Read the descriptive notes about the indexes selected to determine which will probably cover the subject most completely. For an exhaustive treatment of a subject consult all indexes which cover the period needed.
(4) Consult each index by looking under the subject in the main alphabet. If nothing is listed under that heading, note whether reference is given to other headings. If none is so given, try a more general heading and other indexes.

When seeking articles written by a given author—

(1) Determine the type of magazine in which the articles would be likely to have appeared; e.g., in agricultural journals, elementary education magazines, general lay magazines.
(2) Consider the approximate dates at which they were written.
(3) Read the descriptive notes of the indexes covering this period to determine which will include the type of magazine selected by (1).
(4) Consult each index, looking under the author's surname in the main alphabet.

When seeking an article in a given magazine—

(1) Determine the approximate year of publication.
(2) Consult the indexes in the bound volumes of the magazine.
(3) If bound volumes are not available, consult the "list of periodicals indexed" as given at the front of each of the cumulated indexes, described in the following pages, which cover the year needed. This will indicate whether the magazine sought is indexed therein. If it is included, look under the subject of the article sought.
(4) If the magazine is not included in the indexes available, consult the librarians in the Reference Department for further steps.

When the material has been located in the index, it is important to note the references uniformly and accurately:

Enter each reference on a separate slip or card (3 x 5 inches is a convenient size), copying in the order of appearance in the index the following—author's full name, title of article, name of magazine, volume and pages, date.

The following is a sample entry and shows the form which may well be followed when entering references on cards or slips:

Hodges, Katharine Thayer
Art in Japanese schools. School Arts M 24:616-18 Je '25.

This reference should be interpreted as being an article by Katharine Thayer Hodges entitled "Art in Japanese Schools," which will be found in *School Arts Magazine*, volume 24, on pages 616-618, of the June, 1925 issue.

Agricultural Index. 1916-1932.* Vols. 1-17. Monthly, except December. H. W. Wilson Co., New York.

Indexes for subjects in agriculture, horticulture, and rural life, some 135 agricultural periodicals; also important books, pamphlets, bulletins, documents, and reports issued in the United States and some twenty other countries. Includes publications of state departments, college extension departments, experiment stations, farm bureaus as well as business organizations with farming interests such as chambers of commerce and railroads. Current issues of the Index carry announcements of new periodicals and changes of periodical titles in the fields covered. Book reviews within its field are indexed.

For the student of education this index is especially valuable for tracing material on rural education and the teaching of agricultural subjects. Looking under the subject heading Education and using as a subhead the names of countries or states, much of this material will be located. The index is also useful in the field of educational sociology.

Quarterly, annual, and triennial cumulations.

Indexes such magazines as *American Home, Country Life, Experiment Station Record, Journal of Farm Economics, Rural America.*

Education Index. 1929-1932.* Monthly, except July and August. H. W. Wilson Co., New York.

Indexes by author and subject approximately 120 educational periodicals of the United States and Canada. One French, One German, four English, and several international periodicals are also included. Important references from magazines not devoted exclusively to educational problems are added. This index aims to cover educational literature generally and not periodicals alone. Many books, pamphlets, monographs, and reports are included.

Preceding the main index in each issue are valuable check lists of courses of study, federal, state, and city documents, and the publications of educational institutions, associations, and foundations. Reviews of books are indexed under the heading "Book Reviews" in the main alphabet. Only signed reviews are indexed. Reviews of textbooks are not included.

* This symbol is used to indicate that the index is being published currently and later issues will be available.

For the period following January 1929 this is the most generally useful and comprehensive of all the indexes for the field of education. It should be consulted first. For references to educational literature before January 1929 consult the *Readers' Guide* and *International Index.*

This Index superseded the *Loyola Educational Index*, 1928.

Cumulates so that no more than two alphabets need be consulted for the literature of the current year. Annual cumulation in July. A three and one-half year cumulation will be published in July, 1932, three year cumulations published thereafter.

Indexes such magazines as *Childhood Education, Educational Administration and Supervision, Historical Outlook, Journal of Adult Education, Mathematics Teacher, School Review.*

Industrial Arts Index. 1913-1932.* Vols. 1-20. Monthly. H. W. Wilson Co., New York.

Subject index to 234 periodicals on business, economics, finance, applied science, and technology—34 of which are published outside the United States. Each number contains a list of the more important new technical and business books. New pamphlets are indexed in the main alphabet.

While this index is planned to meet the needs of the student of business and technology, it indexes a great deal of material useful to the school administrator or teacher. Under the heading "School houses," the administrator will find listed articles on school buildings, heating and ventilating, and electrical equipment. Topics treated from the engineer's point of view exclusively are not listed in the *Education Index.* The school superintendent or business manager will find articles under "Business conditions," the teacher will find many articles on presentation of industrial subject matter as it is discussed in technical, non-educational periodicals.

Cumulates quarterly, semiannually, and biennially.

Indexes such magazines as *Architectural Record, Journal of Chemical Education, Journal of Industrial Hygiene, Radio News, System, Textile World.*

International Index to Periodicals. 1907-1932.* Vols. 1-19. H. W. Wilson Co., New York.

Author and subject index to 250 selected periodicals devoted to pure science and the humanities. More than half the periodicals listed are published outside the United States.

Formerly called the *Readers' Guide Supplement* (title changed 1920). Covers for specialized and scholarly journals a field formerly covered by *Poole's Index* and the *Library Index*, both of which have been discontinued.

Previous to 1929 it indexed twenty-two of the leading educational periodicals. Of this number five represented important German educational psychology periodicals. Thus, for the period of 1907-1928, this is the most important source of educational periodical bibliography.

The first volume, 1907-1915, carries the indexing back to supplement the last volume of *Poole's Index* (1902-1906).

Published six times a year with annual cumulations in May. These are replaced by cumulated volumes every fourth year.

Indexes such magazines as *American Political Science Review, Christian Century, Deutsche Rundschau, Journal of Applied Psychology, Public Health Nursing, Spectator.*

Loyola Educational Index. 1928. Vol. 1. Loyola University Press, Chicago.

Bimonthly, five numbers. Cumulated December 1928. This cumulation supplanted the February to October issues and concluded the publication of the index. It was superseded after 1928 by the *Education Index.* This index must not be confused with *Loyola Digest* which is primarily concerned with abstracting educational and psychological articles found in sixteen educational periodicals. It indexed about 120 periodicals on the theory and practice of teaching; not for articles on content material.

Poole's Index to Periodical Literature. 1802-1881. (Ed. 3, rev.) Houghton Mifflin Co., Boston. Supplements: Jan. 1, 1882—Jan. 1, 1907. 5 vols.

The first of the important indexes to periodical literature and still the great reference source for English and American magazines of the nineteenth century.

Indexes by subject and title only. No author entries or dates are given. Book reviews are entered under title unless the subjects of the reviews are striking, when they are entered under subject.

Public Affairs Information Service. 1915-1932.* Vols. 1-18. Weekly. Public Affairs Information Service, New York.

Indexes by subject, selected material in new books, current periodicals, government documents, pamphlets, and multigraphed material from English-speaking countries. Its purpose is to make swiftly accessible new and unusual sources of information within the field of public affairs.

Especially helpful in the field of education as a source for educational legislation in the United States and its possessions. It indexes a great deal of material which will never appear in permanent form and is especially helpful because of its frequency of issue.

Cumulates bimonthly and throughout the year with permanent annual volumes.

Readers' Guide to Periodical Literature. 1900-1932.* Vols. 1-32. Monthly, H. W. Wilson Co., New York.

The most important and the most used of the current indexes to general periodical literature. Indexes by author and subject one hundred and twenty general periodicals. Starting as an index of fifteen magazines in demand in small libraries, the permanent volumes of the *Readers' Guide* now contain nearly one million entries.

Preceding the publication of the *Education Index* (begun Jan. 1929) the *Readers' Guide* indexed about twenty of the important educational periodicals. Among this number the following titles were included—*Education, Educational Review, Elementary School Journal, School and Society, School Life, School Review,* etc. It still remains the important bibliographical source for many of the Government Document series. It has indexed the United States Agricultural Department *Yearbook* since 1900, the *Farmers' Bulletin* since No. 500 or the year 1913, *United States Bureau of Labor Bulletin* since No. 86 or the year 1910, and *United States Bureau of Education Bulletin* since 1900. It lists the ten outstanding magazine articles of the month and in a section at the end of the main index it indexes articles announced for publication at a later date.

TABLE I

YEARS COVERED BY VARIOUS INDEXES

INDEX	1802–1899	1900–1910	1910–1920	1920–1930	CURRENT YEARS
Agricultural Index			1916—		
Education Index				1929—	
Industrial Arts Index			1913—		
International Index				1920—	
Poole's Index	1802–1881				
Poole's Index Supplement	1882—	—1906			
Public Affairs Inf. Service			1915—		
Readers' Guide		1900—			
Readers' Guide Supplement[1]		1907—	—1919		

[1] Name changed to *International Index* in 1920.

Cumulates annually and at more frequent intervals so that it is not necessary to use more than two alphabets at any time for the record of the year. Permanent volumes covering several years in one alphabet replace annual cumulations. Annual cumulations in June.

Now indexes such magazines as *American Mercury, Atlantic Monthly, Current History, Hygeia, Nation, Theater Arts Magazine, Woman's Home Companion.*

Readers' Guide Supplement see *International Index to Periodicals.*

TABLE II

CHRONOLOGICAL ORDER IN WHICH INDEXES SHOULD BE CONSULTED FOR CERTAIN TYPES OF INFORMATION

SUBJECT	1802–1900	1900–1910	1910–1920	1920–1930	CURRENT YEARS
Education in Educational Periodicals	Poole 1802–1881 Poole's Supplements 1882–1906	Readers' Guide 1900–1907 Readers' Guide Supplement 1907–1919		International Index 1920–1928 Education Index 1929–	
Education and General Literature in Lay Magazines	Poole 1802–1881 Poole's Supplements 1882–1906	Readers' Guide 1900–			
General Literature in More Scholarly Periodicals	Poole 1802–1881 Poole's Supplements 1882–1906	Readers' Guide Supplement 1907–1919		International Index 1920–	

[1] Name changed to *International Index* in 1920.

II. DIGESTS AND ABSTRACTS

In addition to the indexes which serve as guides to the contents of periodicals there are journals which give abstracts of important periodical articles in selected fields. Not all the following journals are concerned exclusively with education. All of them, however, cover subjects which, if not strictly educational in nature, are closely allied to that field. Those dealing only with education have been placed first; the others follow in alphabetical sequence.

Education in Lay Magazines. Educational Research Service. 1928-1932.* Department of Superintendence, National Education Association, Washington, D. C.

Circulars issued occasionally in multigraphed form, containing summaries of articles on education appearing in general magazines. Those relating to controversial questions in contemporary education are emphasized. Number and selection of periodicals and the number of articles published vary. First issued in 1926 under the title "What Educational Magazines Are Saying."

Appeal is to educators who wish to avoid becoming technical-minded, and to interested laymen.

Loyola Educational Digest. Current Literature and Book Reviews. 1924-1932.* Monthly. Loyola Educational Digest, Chicago.

First issued in 1924. Its service includes (1) a monthly printed bulletin entitled "Current Literature and Book Reviews," (2) digests of educational literature printed on cards. About twenty are issued each month. All are classified according to the Dewey Decimal Classification scheme.

"Current Literature" undertakes to list significant articles on education in some ninety American and British periodicals and carries reviews of educational books. These, according to the editor, differ from other book reviews in being descriptive rather than critical and in noting "when a book seems to be philosophically, psychologically, or ethically unsound and harmful."

The card digests appear from one to six months after the articles have been listed in "Current Literature." They are designed to serve as a personal tool for the research worker, and to exemplify the use of decimal classification numbers as a method for arranging notes. The cards are in a form suitable for filing.

The work is carefully done. It is not intended as a quick reference tool. Its use is facilitated by multigraphed sheets of alphabetically arranged subjects with the corresponding decimal classification number. These are not to date.

Teachers Journal and Abstracts. 1926-1932.* Vols. 1-7. Monthly. Colorado State Teachers College, Greeley.

Signed abstracts of articles from educational periodicals dealing with general and special problems of administration and teaching at all levels. Emphasizes secondary school problems. Prepared by the Faculty of Colorado State Teachers College.

This is one of the best and simplest abstracts of educational material published in periodicals and books. The monthly issues are classified under general headings, such as "General Problems of Education," "Educational Administration," "Educational Psychology," "Elementary Psychology," "Practice and Teaching of Special Subjects." Under these headings the material is listed alphabetically by title. Each issue runs two pages of field notes and articles by prominent educators. The December issue contains a very detailed subject index.

Abstracts of Bacteriology. 1917-1925. Vols. 1-9. Williams and Wilkins Co., Baltimore.

Signed abstracts of bacteriological literature, including society proceedings, in some 500 periodicals, numbered and arranged under broad subject headings. Author and subject index to each volume. Material listed is all of a very technical type and much of it represents the results of studies made in France and Germany.

Continued by *Biological Abstracts*.

Biological Abstracts; a comprehensive abstracting and indexing journal of the world's literature in theoretical and applied biology exclusive of clinical medicine. 1926-1932, Vols. 1-6.* Monthly. Union of American Biological Societies, University of Pennsylvania, Philadelphia.

Signed abstracts under general headings with a subject index for each number and an author and subject index for each volume. Materials listed are all technical. For example, under the general heading "Animal physiology" articles on nutrition, diet, vitamins, general metabolism, and growth are collected. They are, however, valuable to specialists in the field of education.

Thirteen issues are printed each year; twelve are abstract numbers, the thirteenth forms the index.

Child Development Abstracts and Bibliography. 1927-1932.* Vols. 1-6. Bimonthly. Committee on Child Development. National Research Council, Washington, D. C.

A selection of signed abstracts and bibliographical references on child development from current issues of fourteen representative scientific periodicals and abstract journals.

This service was inaugurated in 1927 by the Committee on Child Development of the National Research Council, to meet the demand of child research and welfare workers for an abstract service. The journal appears bimonthly. Each

issue has an author and subject index. Subject headings are broad and planned to meet the needs of welfare workers rather than to conform with standardized subject heading lists. A careful study of the subject index will reveal to the educator a wealth of material on the growth of children, behavior problems, habit formation, etc.

Each bound volume has an author and subject index.

Cumulates annually.

Psychological Abstracts. 1927-1932.* Vols. 1-6. Monthly. American Psychological Association, Lancaster, Pa.

An important reference aid in the field of education. Lists under broad subject classifications signed abstracts of new books and articles in about 300 periodicals and society reports. Subjects pertaining to mental and physical education and growth are covered by this service. Each issue has an author index and a broad subject index. The yearly cumulation has an author index and a detailed subject index. The make-up of the detailed subject index in the annual volume facilitates its usage.

Cumulates annually.

Physiological Abstracts issued by the Physiological Society of Great Britain and Ireland. 1916-1932.* Vols. 1-17. Monthly. Lewis and Co., London.

Signed abstracts of articles from a selected list of leading scientific periodicals and from papers of learned societies in Great Britain, Europe, and the United States. Includes book notices.

Entries under broad subject headings. Annual author and subject indexes.

Social Science Abstracts; a comprehensive abstracting and indexing journal of the world's periodical literature in the social sciences. March 1929-1932.* Vols. 1-4. Monthly. Published under the auspices of the Social Science Research Council. Social Science Abstracts, Inc., New York.

Signed abstracts in English, without criticism or comment, of important articles in 5,000 periodicals from all parts of the world. Materials are translated from thirty-five languages, including, in addition to those better known, Arabic, Basque, Croatian, Welsh, to mention a few. Fields covered include geography, cultural anthropology, history, economics, political science, and research methods. This journal represents the collaboration of 1,500 scholars.

It is published thirteen times a year, the last number being an annual index made up of cumulated table of contents, subject and author indexes. Each month a classified table of contents is published and, since 1931, a subject index. The classified table of contents is arranged to help the specialist grasp related mate-

rial swiftly and to enable him to locate references under headings to which he is accustomed.

For the period covered (1929-date) this is an extremely important reference aid for the student of education. It takes Education in its broadest conception and with great detail lists not only the source of the article but also an authoritative abstract. Under the general heading "Education" will be found such subheads as:

Education, Commercial—Belgium, France, etc.
. . . Higher—Argentina
. . . U. S.—Changing Methods
. . . Rural

III. BIBLIOGRAPHIES

Lists of educational periodicals with information about titles, publishers, prices, editors, the character of the contents, etc., are frequently useful to students and research workers. The following are helpful, depending upon the type of information needed. The descriptive notes with each entry will determine which should be consulted first in specific instances. Only those most generally useful to educators are noted.

Educational Press Association. Yearbooks, 1-7. 1926-1931.* Educational Press Association, Committee on Standards, Washington, D. C.

Issued annually. A classified check list of educational periodicals with editors, publishers, and number of issues per year usually given. The sixth issue includes also the list of sixty outstanding educational books of the year and the "Forty American Books of the Year" prepared by the American Library Association for the American National Committee of the International Institute of Intellectual Coöperation of the League of Nations.

Issued as "Handbook" during first four years.

U. S. Office of Education. Educational Directory. 1912-1931.* Government Printing Office, Washington, D. C.

Issued annually. Beginning with 1913 issue this directory includes an alphabetical list of American educational periodicals currently received by the Library of the Office of Education. The 1928 and consequent issues give for each entry the title, publisher, place of publication, and number of issues per year. Gives references under each state to educational publications issued therein, whether official or commercial.

Monroe, Walter S., Hamilton, Thomas T., and Smith, V. T. Selected List of Educational Periodicals. (In their Locating Educational Information in Published Sources. Univ. of Illinois, Bureau of Educational Research Bull. No. 50, University of Illinois, Urbana. 1930. Pp. 24-41.)

Aims to include those periodicals that are most important for the research worker. For each periodical it gives current title, place of publication, publisher, frequency of issue, date of first volume, number of current volume or number and date of last volume published, editor or chairman of editorial board, and descriptive notes indicating phase of education covered and the general nature of articles published.

Ayer and Son's American Newspaper Annual and Directory. 1880-1931.* Ayer, Philadelphia.

The most used general list of American newspapers and periodicals. Omits certain classes of publications, such as those of private and public high schools and smaller colleges. Gives for each paper its full title, frequency, character or politics, date of foundation, subscription price, circulation figures, editors, publishers, etc. The main list is arranged by state and city, making the consultation of the alphabetical index necessary if the place of publication is not known.

Union List of Serials in the Libraries of the United States and Canada. 1927. H. W. Wilson Co., New York.

A comprehensive list of the holdings of a selected group of some 200 important libraries, giving a catalogue description of each. Especially useful for determining where the issues of obscure, rare, or discontinued journals are available. Not in any sense limited in scope to education. A Supplement covering changes and additions made between January 1925 and June 1931 is now available.

A COMPARISON OF THE SEASHORE AND THE KWALWASSER-DYKEMA MUSIC TESTS

By MARY T. WHITLEY

Associate Professor of Education, Teachers College

UNTIL recently the six Seashore music tests have had an uncontested field. They were the only ones available for the educator who wished to apply a standardized group test for music capacity, or musicality. Though they have been misused, adversely criticized, or ignored, they were unique in their construction and in their availability for whatever they purported to measure. Now, however, a rival series has appeared on the market, though still undergoing processes of validation and general experimentation. In a few months we may expect publication of results from the very extensive work with them undertaken by their originators, Professors Jacob Kwalwasser and Peter W. Dykema.

Meantime, it seemed worth while to the writer to make an experimental comparative study of the two sets of tests, since the question of relative use of them is sure to come up in the minds of teachers. First, a general comparison of the two sets of tests will be made in some detail.

Construction. The Seashore tests come on double-faced Victor records, numbers 53000-1-2-3-4-5D. Three of the tests contain 100 items, three contain 50 items. Six different elements of music perception are tested by a total of 450 samples. The twelve K.D. tests occupy one face each of five Victor records, numbers 302, 303, 304, 305, 306. They test ten elements of musicality by a total of 275 samples. Hand-cut rolls for the Duo-Art player piano were used to ensure mechanical perfection of the control of the factors of duration and intensity, with very satisfactory results in centering the attention on the particular element to be tested.

Recording and Scoring. For the Seashore tests a separate blank must be issued for each test (or two double-faced, one single-faced

blank for the lot); for the K.D. tests one large double-faced blank suffices for all the tests. Assuming that the experimenter will not trust wholly to class correction from a key read aloud as advocated for the Seashore test, the questions of ease, speed, and accuracy are involved in the scoring. For the Seashore series no stencils or matrices are available; they must be homemade if the terrific eyestrain of reading from the keys in the manual of instructions or the slowness of having someone read the key aloud is to be avoided. Such matrices have been used by the writer and her students for some years over blanks spaced and lettered slightly differently from that shown as a sample in the Manual published by Stoelting. They carry the correct letter on a strip paralleling the column of right answers, thus permitting all 100 answers on a blank to be visible at once. Double-faced matrices further economize time in handling. Only one mind set is necessary—to see if the letters are the same, and to cross out those on the blanks which do not match those on the matrix.

For the K.D. tests matrices are supplied by the Carl Fischer Company, which also prints the blanks. Four are needed, two for each side of the blank, and, although machine cut, they require extreme care in alignment to avoid error from extra large openings. The mind set is given for each column, the letter S to be crossed out with one matrix in all but 3 columns, where it is not used at all; similarly the letter D for nearly all columns with the second matrix.

In both the Seashore and the K.D. tests the "number right" is to be centered, and later to be evaluated in percentile ranking as indicated in the respective manuals. In actual practice, since the number wrong is so easily seen, that number is usually added and then subtracted from the total. In the three Seashore tests with totals of 100, the number right is also the per cent right. With the three tests with 50 as a total, the careless scorer is likely to make an error either in subtraction or in failing to multiply by 2. In the K.D. tests, the totals vary, 20, 25, 30, 40, giving abundant chance for error if the subtraction scheme is used. Obviously, a check by counting is advisable in either case. The K.D. blank provides space for entering in graphic form the percentile ranking in all ten tests, making a complete, satisfactory account of a subject's performance to be kept on file. A separate blank is needed for the total record

of an individual in the Seashore test. This, however, provides space for records for performance tests, for musical experience, for replies to questions on musical enjoyment, etc., and, being in folder form, holds the separate test blanks conveniently in the file.

What Do They Test? Seashore claims that his tests measure the innate capacity of the individual. Three tests are based on an analysis of sensitivity to the various physical properties of sound, the ability to discriminate fine differences in pitch, intensity, and duration, respectively. These abilities do not seem to be highly correlated, nor are they directly related to intelligence. The other three tests deal with more complex judgments. (That of relative consonance of paired clangs has proved the least satisfactory from the standpoint of validity and reliability, and, since it was not included in the present investigation, will not be discussed further.) Memory span for sequences of from 2 to 6 tones is tested, involving some pitch sense as well as attention span. Age differences are, then, to be expected. Rhythm sense is described as complex, involving sense of time, sense of intensity, motor impulse, conceivably imaging of an auditory or a motor type. Its biological value and entry into so many phases of life besides music make it important to measure.

For the K.D. tests no claim is made that they measure innate capacity. Since five of them are directly comparable with the five Seashore tests above they may be said to tap the original capacity of the individual. The remaining five, quality discrimination, tonal movement, melodic taste, pitch imagery, and rhythm imagery unquestionably are influenced by training. The whole battery of ten tests will certainly give an index of an individual's musical status at the time of the testing—a very valuable thing for a teacher to know.

The last two, "pitch imagery and rhythm imagery," which were not used in the investigation here undertaken, seem to the writer quite wrongly named. There is no guarantee whatever that imagery enters into the task in any way. In the "pitch imagery" the subject is given twenty-five printed samples of notation all in quarter note form, varying in length from two tones to four. (Four of them have an added factor of a quarter note rest, which surely has nothing to do with pitch.) While the phonograph plays, the subject follows the print, and notes whether the samples match in pitch or not, recording *same* or *different*. The "rhythm imagery" test is similar,

pitch being invariable, but the duration and number of tones and rests are varied. Both are sight reading tests. They test a valuable function used in following printed music while listening. The titles *pitch notation recognition* and *rhythm notation recognition*, respectively, would be preferable. Obviously, both depend on instruction in notation reading and might yield a grade norm of value.

Since the three tests of quality discrimination, tonal movement, melodic taste have no corresponding tests in the Seashore series, and are not dealt with in the investigation to be reported, a description of each will be given here.

The quality discrimination test is devised to measure ability to detect likeness or difference in the qualities of tones produced by different instruments. The authors make no claim that this tests original capacity or training, or a mixture, and the road is clear to see what differences in score a careful training would produce. It is, in the writer's opinion, a valuable and significant contribution to music testing, in that it discloses something we very much wish to know about an individual. Fourteen different instruments are heard in thirty paired samples. They play always the same musical interval, and in each pair of samples the identical pitch is heard. For example, the pairs may be cello, viola,—flute, flute,—flute, French horn,—cello, cello. The thirty judgments are made in terms of *same* or *different* for quality of sound alone.

The tonal movement test requires judgment of the tendency of a succession of tones in an incomplete melodic idea to proceed up or down, the listener to supply a fifth tone mentally. In demonstrating this, care must be taken to use more or other than the first two samples. These two samples are in straight upward and downward sequence, respectively, and so may confuse the listener as to the real point of judgment. A weakness in this test is that items 1 to 6 are all in C major, also items 8 to 11 and 13 to 22. A key feeling is unnecessarily established. The same tonal progressions might have been used, no two in succession in the same key, or even first-related keys.

The melodic taste test is a very happy objectification of Schoen's suggestions, and is similar to existing tests on judgments of poetry. The listener is asked to judge the compatibility of a second phrase with a first phrase of a melody. Each item contains two short

melodies, A and B. The first phrases of A and B are alike, the second phrases are different, one being a good concluding phrase, the other an indifferent or poor one. Choice is made in terms of A or B having the better conclusion. The test in itself is well arranged, having lively and somber items well interspersed. Item 9, *allegro*, following item 8, *lento*, always induces an emotional response in the subjects, a lightening of the faces and slight movements in time with the rhythm. The whole ten items are repeated, with freedom to make different choices, if desired, the second time. The difficulty with this test is the poor timing. Less than 2 seconds is allowed for deciding and writing the A or B, whereas in some cases there is more than 2 seconds between the announcement of the next number and letter and the commencement of the music. This is a very real drawback, especially on the first playing of the disk, and always with younger subjects.

Experience in Giving the Tests. As all agree, the Seashore tests are monotonous and somewhat fatiguing to the attention. The K.D. tests are more interesting for several reasons—they all involve real, musical tones. They are brief, and permit frequent redirection of the attention. There is great variety in the task set for the judgment. There is opportunity for constructive imagination. Some involve real melodies, or fragments of them. These things are not true of the Seashore tests. Three further advantages of the K.D. tests are evident. (1) The rather constant use of the symbols S and D for the judgment of *same* or *different* gives a feeling of familiarity of procedure, of confidence in achievement, as the sequence of tests proceeds. (2) This sequence is well planned for variety. The first test, *tonal memory*, is favored by its position in the series. The second, *quality discrimination*, is intrinsically interesting and appears enjoyable. The mind set is therefore good for the third, *intensity discrimination*, which is apparently disliked before the close. The fourth, the *tonal movement*, reclaims the interest by the novelty of the task to construct one's own termination to a tonal pattern. After this digression, a return to the responses S and D for the next two sets, *time* and *rhythm discrimination*, is welcomed. The difficulties of the seventh test, *pitch discrimination*, are followed by the real music *judgment* of the eighth.

(3) The administering of the K.D. tests is greatly facilitated by

the fact that the phonograph record includes the announcement of the number of each item in each test, thus making it almost impossible for a subject to lose his place and record in the wrong space—a great drawback with the Seashore blanks of 5 or 10 columns of 10 spaces each. This foolproof device eliminates the need for the experimenter to do any announcing of columns or items, or otherwise to accompany or interrupt by directions while the disk is playing, as is frequently necessary when younger subjects are taking the Seashore tests.

The ten K.D. tests are planned to occupy not more than an hour. In the sixth grade and above, the eight on the front side of the blank can easily be given in a 45- or 50-minute period. With fifth grade children a full 60 minutes is advisable for the eight. For the Seashore tests, the five (omitting consonance) can, with great care in the economy of time, be given in one clock hour to grades above the sixth. With younger children, who take longer to understand the directions and require more preliminary practice, 75 to 80 minutes is the minimum required—not at one sitting, of course.

Five Tests Which Are Directly Comparable. The K.D. battery contains five tests directly comparable to the Seashore tests. It was the respective validity and reliability of these in which the writer was interested, and to compare which the experiment was undertaken. These five are discrimination of pitch, of time, of intensity, of rhythm, and of tonal memory.

Pitch. The Seashore test has 100 items, 10 each of 10 degrees of difficulty ranging from 30 double vibrations difference to 8 d.v. in the first half of the test, from ½ d.v. to 5 d.v. in the second. One standard pitch of 435 d.v. is preceded or followed by the different pitch; the judgment on each pair of tones is to say whether the second is higher (H) or lower (L) than the first. The answers are recorded in ten columns, A to J, each column being uniform in difficulty, F and G calling for the finest discrimination. One can tell at a glance by the location of the corrections whether a real test has been made. If they are scattered over the blank, either the subject did not understand, or was not paying attention, or, possibly, has no sense of pitch. A retest is advisable. For self-correlation, the upper half of the blank can be matched with the lower half, a more rapid technique than that of picking odds and evens. There are

some unevennesses in intensity in at least three places, which confuse the listener.

The K.D. pitch test has 40 items, 20 at 500 d.v., 20 at 1,000 d.v. level. In each a tone is sounded for about 3 seconds with or without a pitch change in the middle. There are 12 changes to a higher pitch, 10 to a lower pitch, 18 items with no change. The deviations in pitch range from .40 of a tone to .01 of a tone, arranged in order of difficulty for both the plus and the minus changes at each pitch level. Judgment is made in terms of whether the tones are the same in pitch throughout each item, or different. For self-correlation, items 1 to 10 and 31 to 40 can be matched with items 11 to 30 to secure equal difficulties, cases of plus and minus, and both pitch levels. The absolute intensity of the sounds, including the announcer's voice, is so great that it is disagreeable to listen to. Unless a soft needle is used, or the lid of the phonograph closed, an emotional nervous tension is developed in the subjects which may influence their reactions. Fortunately it is the only one of the K.D. series with this disability.

Intensity. Seashore has 100 items, 20 each of 5 degrees of difficulty. Single audiometer tones with the intensity controlled by electricity were used for the record. Judgment is made as to whether the second tone is stronger (S) or weaker (W) than the first. The second half of the test duplicates the first for difficulty, and for gradation of difficulty, though not for arrangement of answers in any column. Since columns E and J are most difficult, and D and I next in difficulty, again a mere glance at the corrected blank indicates whether or not a real test on the subject has been made. For self-correlation either the first five and last five columns can be matched, or odds and evens, or upper five and lower five rows as in the pitch test.

The K.D. test has 30 items, 15 of single tones paired, 15 of common chords paired. Duration is held constant by using a hand-cut roll for the Duo-Art reproducing piano from which the Victrola record was made. The piano's mechanical control varies the intensities through fifteen different units, any two of which can be compared. The differences tested run, for both tones and chords, in a sequence 14, 12, 10, 8, 3, 2, 1, 1, 1, 2, 3, 4, 5, 6, 6. A self-correlation can be obtained by matching odd against even numbered items.

Time. Seashore uses 100 items, 20 each of 5 degrees of difficulty. Since the judgment of tone duration, of filled time, is more familiar, presumably more influenced by training, the test was constructed to require judgment of two intervals of time, empty time, as marked off by three clicks. A standard interval of 1.00 second, is preceded or followed by the different one to which it is to be compared; judgment is given whether the second interval is longer (L) or shorter (S) than the first. The arrangement of the test is peculiar. The first 20 items, columns A and B, are alike in difficulty with a difference of 20 hundredths of a second. The next 20 items, columns C and D, are alike in difficulty, with a difference of .14 of a second. Items 41 to 50, column E, which finishes the first side of the disk, and items 91 to 100, column J, which finishes the second side of the disk, are alike in difficulty with a difference of .09 of a second. Columns F and G are alike in difficulty with a difference of .02 sec.; columns H and I, with a difference of .05 sec. Again, if this unusual scheme is kept in mind a glance at the corrected blank helps in diagnosis; there is a real test of the individual if the mistakes are concentrated in columns F and G, a few less in H and I, and so forth. Self-correlation is possible by matching upper and lower five rows, or odds and evens, or paired columns as described above. The drawback to this test is that the directions usually need considerable amplification for subjects to grasp the idea of intervals of time. Timed-and-spaced-strokes on the blackboard, claps, steps long and short help clarify the idea, with the customary preliminary trials from the phonograph record itself. The machine must be slowed down to 60 revolutions per minute from its usual rate of 78. Where this is impossible, as in the newer radio-Victrola combinations, the test cannot be given.

The K.D. time test contains only 25 items. These are of three consecutive tones, the first and third always of equal duration, .74 of a second, the middle tone being equal in 12 cases, longer in 13 cases. The durations of the changed tones range from 1.03 to .76 of a second, the differences to be discriminated being .29, .22, .14, .10, .06, .05, .04, .02, .04, .06, .11, .14, .18 of a second. The judgment is to be made as to whether the three tones are the same in length, or different. The order of arrangement makes matching for self-correlation rather complicated. If item 2, the easiest dif-

ference, is ignored, equal total difficulties in the first and third quarters can be matched with the second and fourth quarters of the test. The drawback to the test is a species of echo—whether objective or subjective the writer is not prepared to say—which confuses the listener by a carry-over between tones. This occurs in spite of great care to control duration by means of the hand-cut roll for the Duo-Art piano with its accurately spaced slots, which was used for the record. This echo effect may decrease the validity and justify Seashore's insistence on measuring empty rather than filled time, and on using clicks rather than vibrating strings to measure off the intervals.

Rhythm. The Seashore test contains 50 items. The stimuli are clicks of two different intensities, arranged in patterns of various degrees of difficulty for total length and general complexity of relative durations. Each item consists of a pair of patterns to be judged same or different. There are 24 cases of different (D), 26 of same (S). The original of the record was a punched strip of paper drawn mechanically between a brass plate and a brass brush which made electric contacts through the patterns of holes. Intensity and time were thus rigidly controlled. There is a general progression from easy to difficult in the 50 items, but no equation of 10 items in a column as in the other Seashore tests, no areas of special difficulty evident in correcting many hundred papers. For self-correlation either odds and evens can be matched or upper five rows with lower five rows.

The K.D. test contains 25 items. The stimuli are tones of two pitches, all the rhythmic patterns occurring on B, a final tone on C. The patterns vary in length from 4 tones to 8. Each item, as in the Seashore test, contains a pair of patterns to be judged same or different. As in other K.D. tests a hand-cut Duo-Art roll formed the original of the record. As in the time test, the echo carry-over from a tone obscures a rest value. There are 13 cases of same, 12 of different. Omitting item 1, the odds and evens may be matched for self-correlation purposes. A drawback in the test lies in the fact that unless special precautions are taken in the preliminary explanations there exist three catches in it. Nothing is said in the formal directions as to intensity (accent) or duration differences in the rhythmic patterns. The first 6 pairs are alike in intensity, with 3 cases of difference in relative duration. Pair number 7 has a

difference of accent only, relative durations being the same. Numbers 8 to 15 include 5 pairs alike, 3 with duration differences. Number 16 has an accent difference only. Numbers 17 and 18 are similar, number 19 contrasts accent only. Numbers 20 to 25 include 3 similar pairs, 3 differing in duration. The mind's set is so evidently toward duration differences only that there is little discrimination to be expected in pairs number 7, 16, 19. As a matter of fact, they are wrongly marked in 80 per cent of all papers examined. The Seashore items have no case of difference in accent alone.

Memory. The Seashore test contains 50 items, 10 each of a series of 2, 3, 4, 5, and 6 tones. Pitch is involved, but a melodic configuration is avoided by the use of peculiar intervals, no key suggestion, many accidentals. However, items 16, 17, 21, 25, and 36 do contain melodic unity in spite of effort to avoid it. Each item involves two playings of the series of tones, in the second playing of which one tone is changed in pitch. Duration and rhythm are kept constant. The listener is instructed to count mentally during each playing so that he can identify the tone that is changed; he records this by number. The range of difficulty provides for an adequate test for highly trained, musical, mature subjects. Mistakes in the first column indicate lack of understanding and the desirability of a retest. For self-correlation, odds and evens or upper and lower five rows can be matched. The drawback to this test is the difficulty of getting younger or less intelligent subjects to understand what the task is. Explanations and demonstrations consume a good deal of time. Even so, in a group of fifth grade children there will usually be some who fail to understand. A technical weakness in the record is an intensity difference in a few items which accents the very tone changed. Also, in the 5- and 6-tone lengths the interval for writing down the judgment is shortened unduly.

The K.D. test has 25 items ranging in length from 4 to 9 tones. All are melodic, contained within the diatonic major scale and, except for item 1, terminate on the tonic. Intensity is kept constant. A pleasing variety of rhythm is introduced. Each item consists of a pair of patterns to be judged simply same or different. The thirteen cases of difference consist of a change in pitch of one tone only, though this involves interval changes, and once a direction of movement change. The general arrangement suggests probability of more

errors in the last part of the test with its longer memory span; but other factors of difficulty occur in the position with regard to pulse beat of the changed note. For self-correlation, odds and evens may be matched.

Summing up thus far, the advantage would seem to lie with the Seashore tests for reliability because of their greater length, and for validity in possibly the rhythm and time tests. The advantage lies with the K.D. tests for pleasure in taking the tests, technique of administration, general usefulness to the music teacher in the ten varieties of musicality tested.

The Experimental Testing of the Tests. The study was undertaken to determine the reliability of each series, and the correlation of the five supposedly similar tests in the two series. Five Seashore tests were used—pitch, intensity, time, memory, and rhythm. Eight K.D. tests were used, those to which the answers appear on one side of the blank—memory, quality, intensity, tonal movement, time, rhythm, pitch, and musical taste. The subjects were children from the fifth grade (the lowest to which the Seashore tests should be given in group form) to the ninth, inclusive, and adults. There were, in all, from 794 to 883 individuals who took both sets of tests: 405 to 461 from the fifth and sixth grades of the public schools of Westfield, New Jersey, 263 to 299 from the seventh, eighth, and ninth grades, some from the high school in Grantwood, New Jersey, some from the 1931 Summer Session enrollment at the Teachers College demonstration school. There were from 118 to 126 adults, some from the College of the City of New York, some from Teachers College, Columbia University. Owing to absences from one or more sittings, the numbers varied for each pair of similar tests to be compared. The tests were given by the writer, or under her supervision, by Mrs. Helen Lea, of Westfield, New Jersey, who also scored and tabulated most of the children's papers. Groups of not more than 20 to 35 were tested at once except for one group of 63 adults. From two to four sittings were needed for each group, according to the length of the school period available and the age of the subjects.

Use of Data. Since Seashore gives percentile ranking as norms separately for the fifth grade, eighth grade, and adults, while the K.D. rankings were standardized on 2,000 "grade and high school pupils," and since the form of the distribution curve was not ascertain-

able in any test of either series, it was decided that the percentile rankings could not be directly compared. The raw scores were used instead, both for correlation and for reliability findings.

Correlation. For each of the five comparable tests four correlations were calculated, one for the total number of subjects, one for the fifth and sixth grades taken together, one for the seventh, eighth, and ninth grades, and one for the adults. The results are shown in Table I.

As will be seen from Table I the coefficients of correlation are, except in one case for intensity, much more than four times their P.E., and are therefore reliable. It is also clear that the correlations are not so high as might be expected if both sets of tests are valid for the traits they attempt to measure. The highest correlation is for adults' memory, practically .71; the lowest is intensity for the seventh, eighth, and ninth grades, approximately .11. The rank order for high correlation is memory, rhythm, pitch, time, intensity, for all cases together. Intensity correlation is lowest with all groups. The comparison presented in Table II makes this clear.

While the results of this investigation were in process of analysis a study of music tests was published by Tilson,[1] in which a comparison of Seashore and K.D. tests was included. From 77 to 83 adults in the music department at Indiana State Teachers College, who had already taken the Seashore tests, were given the K.D. tests. The pitch test was given three times, the other tests twice, and the best record made was used. The score was kept in terms of the percentile rankings given in the tables of norms in the respective manuals. These percentile rankings from the best test record were used as the basis of a correlation calculation. The results are given in Table III, compared in parallel columns with the adult records in this study of correlations of actual scores from one test only. Obviously, there is much that obscures a direct comparison. There is at least agreement that time and memory correlate highest, and intensity correlates lowest.

Incidentally, the mean scores on the Seashore tests made by the adults in this investigation are below the 50 per cent rank in Sea-

[1] "A Study of the Predictive Value of Music Talent Tests for Teacher-Training Purposes." *Teachers College Journal*, Vol. 3, No. 2, pp. 101-128, Nov. 1931. Indiana State Teachers College, Terre Haute, Ind.

TABLE I*

CORRELATIONS FOR EACH OF THE FIVE COMPARABLE TESTS OF THE SEASHORE AND THE K.D. BATTERIES

TEST	GROUP	*N*	SEASHORE MEAN	S.D.	K.D. MEAN	S.D.	SEASHORE-K.D. *r.*	P.E. *r.*
Pitch	All	883	71.64	13.12	25.79	3.80	.4077	.018
	5–6	461	69.39	12.96	25.62	3.51	.3978	.02
	7–8–9	299	74.03	12.44	25.75	4.07	.3882	.03
	Adult	123	74.24	13.82	26.47	4.07	.4861	.04
Intensity	All	853	74.99	11.62	23.07	2.23	.2770	.021
	5–6	461	71.77	10.85	22.64	2.40	.2825	.03
	7–8–9	267	75.74	11.52	23.57	1.84	.1068	.04
	Adult	125	85.27	7.67	23.60	1.96	.3762	.05
Time	All	850	67.90	10.12	17.91	2.99	.3595	.020
	5–6	433	65.87	9.03	17.28	2.83	.2847	.03
	7–8–9	299	68.47	10.24	18.42	2.81	.2617	.03
	Adult	118	73.90	10.94	18.97	3.42	.5519	.04
Memory	All	794	58.09	17.41	16.99	3.05	.5423	.016
	5–6	405	53.12	15.95	16.54	2.81	.4421	.02
	7–8–9	263	59.63	16.44	16.97	3.05	.4978	.03
	Adult	126	70.87	16.76	18.50	3.33	.7099	.03
Rhythm	All	850	69.14	10.84	17.60	2.52	.4346	.018
	5–6	459	66.13	9.80	17.28	2.34	.3043	.03
	7–8–9	265	70.02	10.54	17.63	2.75	.5177	.03
	Adult	126	78.26	9.55	18.70	2.28	.4275	.05

TABLE II

RANK ORDER OF HIGH CORRELATIONS OF THE SEASHORE AND K.D. TESTS

TEST	ALL	ADULTS	GRADES 7–8–9	GRADES 5–6
Memory	1	1	2	1
Rhythm	2	4	1	3
Pitch	3	3	3	2
Time	4	2	4	4
Intensity	5	5	5	5

*For the statistical work involved in this table and in Tables IV and V, I am indebted to Miss Ruth Freudenheim of Teachers College.

TABLE III

CORRELATIONS OF SCORES MADE BY ADULTS ON THE SEASHORE AND K.D. TESTS IN THE TILSON STUDY AND IN THE PRESENT STUDY

TEST	TILSON	PRESENT STUDY
Pitch	.1445 ± .07	.4861 ± .04
Intensity	−.1195 ± .07	.3762 ± .05
Time	.401 ± .06	.5519 ± .04
Memory	.324 ± .06	.7099 ± .03
Rhythm	.224 ± .07	.4275 ± .05

shore's manual, and are, therefore, lower than those obtained by the group on which he standardized his tests. For the K.D. tests—standardized on grade and high school students—the adults in this study obtained, on the average, rankings of from 50 per cent on the pitch test to 87 per cent on the memory test. Since the memory span varies directly with maturity, this is not surprising. Tilson's subjects, selected for musicality to start with, and their scores still further selected, made average rankings from 72 per cent to 84 per cent on the Seashore tests, from 83 per cent to 94 per cent on the K.D. tests.

Tilson questions the method of deriving the K.D. rankings from the number of right answers rather than the per cent right, although he has used these percentile rankings, based on school children standards, as his basis for correlation. He further suggests, in the light of his low correlations, that either the two series are not equally accurate measures, or they measure different traits in some degree. Later, using as a criterion the grades given the music students for one quarter in ear training and sight singing, he finds the Seashore test scores correlating about as well as native capacity scores usually do with achievement scores, namely, from .20 to .56. The K.D. test scores correlate from −.11 to .40; therefore, he concludes that the K.D. tests measure less reliably than do the Seashore tests. Pitch, intensity, and time gave negative correlation with his criterion.

Reliability. To measure the reliability of the K.D. tests, 895 cases were available in this study, more than half from the fifth and sixth grade children. A self-correlation was calculated for each of the eight tests given by the split half technique described above as best equating the two halves in each case. Table IV shows the results for

TABLE IV

SELF CORRELATIONS—K.D. TESTS

TEST	GROUP	N	SELF r	P. E.	STEPPED UP
Memory	All	895	.3786	.0192	.550
	5–6	477	.3584	.0268	
	7–8–9	297	.3279	.0347	
	Adult	121	.4638	.0485	
Quality	All	895	.2688	.0209	.423
	5–6	477	.2639	.0287	
	7–8–9	297	.2839	.0359	
	Adult	121	.2538	.0577	
Intensity	All	895	.2721	.0209	.428
	5–6	477	.3345	.0268	
	7–8–9	297	.1042	.0368	
	Adult	121	.2286	.0583	
Tonal Movement	All	894	.7144	.0108	.830
	5–6	477	.6564	.0175	
	7–8–9	296	.8127	.0136	
	Adult	121	.6725	.0331	
Time	All	895	.3198	.0202	.477
	5–6	477	.2823	.0285	
	7–8–9	297	.3178	.0350	
	Adult	121	.3295	.0549	
Rhythm	All	894	.2727	.0209	.428
	5–6	477	.2493	.0288	
	7–8–9	296	.2795	.0359	
	Adult	121	.2277	.0584	
Pitch	All	894	.2411	.0212	.388
	5–6	477	.2269	.0294	
	7–8–9	296	.2384	.0367	
	Adult	121	.2659	.0572	
Taste	All	894	.1231	.0222	.219
	5–6	477	.0660	.0310	
	7–8–9	296	.0944	.0386	
	Adult	121	.1864	.0594	

the three groups separately as well as for all cases together for each test. The last column shows the self r for the total number of cases stepped up by the Spearman-Brown formula $\left(r_s = \frac{2rh}{1+rh}\right)$.

The highest coefficient is for tonal movement, the lowest for taste. Of the thirty-two correlations calculated, twenty-five may be considered reliable measures, judged by their P.E. Those for intensity in the junior-high-school level, and all subgroups for musical taste are unreliable; and those for the total group for taste, and for adults in rhythm and in intensity are doubtful. Even when stepped up, the tonal movement test is the only one to exhibit a satisfactory degree of self-correlation. Tilson presents no comparable data for his students. It is to be hoped that further checking on the reliability of these tests may soon be available from a repeated administration of the K.D. tests as well as by the method of self-correlation.

For the Seashore tests a random sampling was made, including a smaller total number of cases, but relatively more adults. The split half, upper and lower five rows technique was used, the calculation being based on the number of errors scored. This was a more rapid method than using the number right, as the figures in this technique are smaller. The detailed results are shown in Table V. The last column gives the coefficient stepped up by the Spearman-Brown formula for the total cases and also for adults. Farnsworth has shown that this formula has a high predictive value for the Seashore tests.

The highest correlation is for memory, the lowest for rhythm. All correlation coefficients are reliable, judged by their P.E. Before stepping up, only memory gives a satisfactorily high degree of self-correlation; after application of the formula, pitch and intensity are also well above the minimum satisfactory to test makers.

Other investigators have published reliability coefficients for the Seashore tests. Sometimes a retest was given; sometimes the split half technique stepped up was used. Sometimes, in cases of retest, the percentile ranking was the basis of calculation; at other times the per cent of right answers was the basis; sometimes it is not stated. Such figures as are pertinent from other studies are brought together in Table VI for direct comparison with the present findings. Only adults' scores are quoted.

TABLE V

SELF CORRELATIONS—SEASHORE TESTS

TEST	GROUP	N	SELF r	P. E.	STEPPED UP
Pitch	All	452	.7421	.0144	.850
	5–6	161	.7154	.0257	
	7–8–9	131	.7175	.0285	
	Adult	160	.7560	.0225	.861
Intensity	All	463	.7611	.0133	.868
	5–6	171	.7215	.0249	
	7–8–9	132	.6778	.0318	
	Adult	160	.6806	.0287	.810
Time	All	463	.6031	.0201	.750
	5–6	171	.4205	.0435	
	7–8–9	132	.5932	.0385	
	Adult	160	.5797	.0354	.734
Memory	All	462	.8079	.0133	.893
	5–6	170	.7380	.0234	
	7–8–9	132	.7210	.0285	
	Adult	160	.8014	.0192	.889
Rhythm	All	472	.5820	.0206	.734
	5–6	172	.4167	.0426	
	7–8–9	140	.4600	.0449	
	Adult	160	.5011	.0400	.667

A fairly close agreement is evident. The coefficients for pitch are much alike—and more alike than for any other test. In all except Griffitts' work—with very few subjects—the reliability of time is low as compared with that of pitch or memory. McCarthy's figures, obtained by methods similar to those used by the writer, are in closest agreement.

Comparing the Seashore and the K.D. tests for reliability on similar purpose tests, the results are as shown in Table VII. The figures are taken from Tables IV and V, the total number of cases used, the stepped-up coefficients.

The superiority of the Seashore tests for reliability is evident. This low reliability of the K.D. series is a factor in the low correlations

TABLE VI

RELIABILITY COEFFICIENTS FOR THE SEASHORE TESTS AS DERIVED BY DIFFERENT INVESTIGATORS

INVESTIGATOR	METHOD	N	PITCH	INTENSITY	TIME	MEMORY	RHYTHM
Brown	Retest in 4 Months	89 to 93	.71±.03	.65±.04	.48±.05	.59±.04	.29±.06
Farnsworth	Split Half Upper, Lower	142 to 328	.724±.018	.659±.026	.460±.044		
Griffitts	Retest in 1 Week	32	.73	.76	.81	.83	
Highsmith	Retest	59	.762	.500	.521	.820	
McCarthy	Split Half Odd and Even	58	.77	.62		.74	
	Stepped Up		.87	.76		.85	
	Split Half	35	.84	.46	.57	.80	
	Stepped Up		.91	.63	.73	.89	
Ruch and Stoddard	?	100	.70	.66	.53	.66	.50
This Study	Split Half Upper, Lower	160	.756±.022	.680±.028	.579±.035	.801±.019	.501±.040
	Stepped Up		.861	.810	.734	.889	.667

TABLE VII

SEASHORE AND K.D. RELIABILITIES COMPARED

TEST	PITCH	INTENSITY	TIME	MEMORY	RHYTHM
Seashore	.850	.868	.750	.893	.734
K.D.	.388	.428	.477	.550	.428

between the two series. It may be seen from Table I that the correlation for memory is highest, where the reliability is also highest for each; it is fairly high for adults in time, in which the K.D. reliability is next highest.

Applying the Spearman-Brown formula in another way it is seen that the K.D. tests would have to be from five to nine times as long as they are at present to yield a reliability coefficient as high as that of the Seashore tests. Lanier states, however, that the Seashore tests could be shortened to approximately half their present length without serious loss of reliability, a conclusion from which Farnsworth dissents.

CONCLUSIONS

The Seashore tests might well be revised now after their many years' use. They lack interest value, and they discriminate against the younger subjects, partly for this reason, and partly because of the concentration of attention needed. The revision might adopt the useful device of the K.D. series of incorporating the announcer's voice item by item with the actual test stimuli on the phonograph record. This assists very greatly in keeping subjects oriented.

They could possibly consist of seventy items and still retain their reliability. This study confirms the reliability found by other investigators.

The K.D. tests are suggestive in their wider range of musical traits tested. The ingenuity displayed in building the quality and musical taste tests opens a promising field for further investigation. The extreme care shown in the mechanical construction may guarantee the validity of at least the intensity test. Improvements can be suggested for the time and rhythm tests from the mechanical point of view, for the musical taste for its timing. For the pitch test a new recording is greatly to be desired.

Though interesting to take, the K.D. tests are all low in reliability. That this is not wholly due to their brevity is indicated by the fact that the longest test, pitch, has a negligible coefficient of reliability. It is hoped that further notes on reliability may be forthcoming from the large numbers of tests administered to children by Professor Dykema in the summer of 1931.

The K.D. tests are less discriminative than the Seashore tests, selected groups of music students making consistently high, almost

perfect, scores on them. They might be made more difficult, and so be a finer measure than they now are.

There is low correlation between the five tests in each series supposedly measuring the same traits, a fact found also by Tilson. The low reliability of the K.D. series is probably a factor in this.

The procedure suggested in the K.D. manual of throwing all ten scores together and from them obtaining a person's ranking by a norm is, in the writer's opinion, indefensible statistically and psychologically. To have used the per cent of right answers rather than the crude number right would be necessary, since the tests vary considerably in length. But, mere addition of trait scores tells us nothing significant about a person. Such diagnostic value as the series possesses is swamped by using a single index of musicality.

A word may be added here as to the use of either series in attempts to correlate with music achievement. Music directors seem to have been disappointed at the low correlations found between Seashore test scores and either history of orchestral participation or teacher ratings, not realizing that sheer capacity tests cannot measure performance. That they do separate the best sheep from the worst goats musically has been proved; also that the best performers, and groups selected for special music training score high on the Seashore tests is well known. In this new series some abilities influenced directly by training are included and may therefore be expected to show higher correlation with achievement ratings.

We will hope for a revised battery of tests, diverse, interesting, with perfected construction, long enough to be reliable—in fact, combining the good features of each of the present series.

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NEW STUDIES IN EDUCATION

A CRITICAL STUDY OF THE TEACHING OF ELEMENTARY COLLEGE MATHEMATICS*

The Problem

THE general purpose of this study was to investigate the actual practices and methods of college teaching in the field of freshman and sophomore mathematics. Sixty-six teachers of college mathematics (faculty members of twenty institutions of higher learning) helped to provide the primary source data of this study. The analyses, conclusions, and recommendations are based chiefly on 150 completely recorded classroom recitations and, in part, on the critical judgment of the observed and interviewed teachers.

Primarily this study is a report of actual classroom procedures grouped, analyzed, and digested so as to yield factual data relative to the following inquiries: (1) Are the methods of procedure employed by teachers of college mathematics amenable to classification? (2) Why is teaching at the college level generally considered ineffective? That is, what are the outstanding faults? (3) Are college teachers still antagonistic to inquiries into their teaching? Are they still of the opinion that *methods of teaching* are inapplicable to their work? (4) Is teaching—as distinguished from productive research—the chief concern of college teachers? (5) In the light of the data supporting this study, what conclusions may be drawn concerning the relative merits of the observed recitations?

Findings and Conclusions

The 150 recorded observations may be divided roughly into seven groups.

(i) The lecture which goes far afield, generally instructive and impressive or interesting.

(ii) The lecture used as a method of developing a theory, or solving a problem, occasionally interrupted either by the instructor's question or by a student's inquiry.

(iii) The recitation in which the time is fairly evenly divided between instructor and students. The students' questions appear to be spontaneous. The instructor is resourceful and enthusiastic.

(iv) A combination of blackboard and oral recitation. The students show a lively interest; the instructor is casual and entertaining.

(v) A ground-covering, textbook-repeating recitation, at which the students participate technically and mechanically.

* By Joseph Seidlin, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 482.

(vi) A carefully planned question and answer development.

(vii) A blackboard recitation, at which students recite, and are given a grade.

Although the scope of this study does not permit generalizations on all the possible faults which may result in ineffective teaching, the following have been selected for emphasis and analysis: Violations of some established laws, or principles, of learning; excessive emphasis upon examinations; the influence of the textbook; the use of the question.

This study contradicts the rather prevalent notion that there exists among college teachers a massed hostility to ideas or suggestions which promise any improvement in the teaching situation.

In the smaller colleges (both liberal arts and engineering) teaching appears to be the preëminent concern of the teachers; in the larger colleges teaching is avowedly subordinated to "productive research."

Allowing for certain exceptions, this study leads to the following ranking (in ascending value) of the seven recitation types:

(v), (vii), (i), (vi), (ii), (iv), (iii).

In particular, (v) is placed lowest because: It lacks motivated activity, clear-cut exposition, organization; the teacher serves little purpose other than that of drill master; it fails to differentiate between the fundamentals and the details of the course.

On the other hand, (iii) is ranked highest because: It most nearly approximates the better qualities of certain essential determinants of teaching; it contains the fewest violations of certain principles of the learning process; it places comparatively little emphasis on examinations; it is not dominated by the textbook; it utilizes the educative possibilities of the question to a fuller extent than any of the other types.

CONCLUSIONS

Briefly, this study is a pioneer investigation of actual classroom procedures employed by teachers of college mathematics in twenty Eastern colleges and universities. An attempt is made to summarize, criticize, and evaluate present-day methods of college teaching, which, explicitly or by implication, suggest the need of improvement and the possible ways of bringing it about in the teaching of elementary college mathematics.

THE INFLUENCE OF DIFFERENT STIMULI UPON PRECEDING BONDS*

AN EXAMINATION OF THE LAW OF EFFECT

THE law of effect has been criticized because it implies that a *mental* condition such as satisfaction could affect a physical or neurological condition such as a bond. This conception of mind-body interaction has been held to be highly dubious. Many psychologists have also objected to the idea of "back-action"

* By J. M. STEPHENS, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 493.

involved in the law of effect. They have maintained that it is difficult to see how such a condition as the satisfaction which follows the act can affect an act which has already been performed.

This study shows that the bulk of the evidence supports the law that conditions occurring after the operation of bonds do affect the bonds. Hence the "back-action" is necessary to explain learning. This is supported by the argument that *adaptive* learning would be impossible without such "back-action" since the adaptiveness of a bond is determined by the conditions which it brings about or which follow it.

In dealing with the problem of mind-body interaction this study shows that these subsequent conditions need not be mental but may be thought of as the physical stimuli following an act. To determine the truth of this hypothesis an experiment was devised in which the mental conditions (the idea of success or failure) were held constant in a series of tests in which the physical stimuli varied. After each of his attempts to hit a spot on a target, each of fifty-six subjects was informed by different signals whether he was right or wrong. The efficiency of the learning varied from .36 ± .011 (1.00 being perfect efficiency) when the signal was "a light flashing immediately for 'correct,'" to .14 ± .012 when a strong light flashed for "right" and a weak light for "wrong." The other signals in order of efficiency were "heavy shock in hand for 'wrong'" .30 ± .012; "medium shock in the neck for 'wrong'" .29 ± .012; "medium shock in the hand for 'wrong'" .257 ± .012; and "a light flashing 2 seconds after the thrust for 'right'" .24 ± .012.

Since the knowledge of results was the same in all cases and the efficiency varied with the signals, the study concludes that the signals or physical stimuli affected the learning apart from the mental conditions.

THE INTRODUCTORY BIOLOGICAL SCIENCES IN THE TRADITIONAL LIBERAL ARTS COLLEGE*

THIS investigation is an attempt to discover how much the introductory biological sciences contribute to the needs of a liberal education. The introductory biological sciences are evaluated not only in terms of the objectives of instruction which are claimed for the subjects, but also in terms of the actual objectives of instruction indicated by textbooks and final examination papers.

After a brief survey of the history of biology instruction in colleges, the educational aims of liberal arts colleges to-day are discussed. This leads to a consideration of the meaning of a liberal education as the term is now conceived in contemporary educational philosophy. This concept of a liberal education is then analyzed into its subsidiary objectives, which are used as criteria throughout the study in evaluating present instruction in biology.

An examination of the objectives of biology teaching listed in a considerable

* By GEORGE E. NELSON, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 501.

number of college catalogues disclosed that there was little agreement between the objectives directing instruction in the subject and the subsidiary objectives of a liberal education. It became evident that the emphasis in actual instruction was placed upon the acquisition of information almost exclusively, very little attention being given to the scientific attitudes or methods which should have an important place in any system of liberal education.

Final examination practices indicate that many instructors have been slow to accept the new-type examinations. An analysis of the questions included in these final examinations resulted in the selection of the subject matter of the field of biological science given the greatest emphasis to-day. Further study of the present teaching practices in the biological sciences seemed to indicate that they are directed chiefly toward isolated elements of factual knowledge, which are likely to pass out of mind rapidly unless they are correlated so as to lead to interpretations, principles, or generalizations. Since the mastery of these learning elements is important in that they are the building units out of which principles and generalizations are developed, a series of objective tests covering the whole field of biological science was evolved and then administered to a group of about seven hundred and fifty students.

The results achieved on these examinations indicated that only one-half of the group of students taking the examinations succeeded in mastering as many as one-half per cent of the basic factual material which had been established as valid for the test.

A study of biological material found in extracurricular sources leads to some interesting conclusions. Newspapers and general periodicals were found to contain considerable biological material suitable for the purposes of a liberal education. Much of the biology in these sources is supplementary to that usually found in textbooks or emphasized in current biology courses. Health, for example, is stressed in newspapers and periodical articles on biology, but is given little or no attention in introductory biology courses at the college level. Although the circulating library of one institution collaborating in the study contained more than one hundred books discussing biology from the point of view of the educated layman, rather than from that of the professional biologist, none of these books were used as supplementary or recommended readings. In fact, very few institutions employ supplementary readings in connection with their introductory biology courses. In one institution, which seemed to be typical, students who had just completed a biology course were grossly ignorant of these "popular" books on biology, and did not even recognize their authors and titles. A very limited number of students seem to engage in biological 'hobbies." If biology courses included exercises of an exploratory nature intended to bring the students into contact with some of these experiences, it is possible that many worth-while and lasting "hobbies" might result.

There seems to be a need of more satisfactory criteria in the choice of subject matter for introductory courses in the biological sciences. It would seem that the educational function of subject matter, rather than its logical association or traditional position in the science of biology, should determine what instructional material is to be included in the

introductory course. In this study a number of objections are raised to present biology courses, and it is urged that these courses should be reorganized so as to consider the learner's point of view and his functional needs instead of assuming that he is preparing for a biological career.

STATE CONSTITUTIONAL PROVISIONS FOR EDUCATION*

FUNDAMENTAL ATTITUDE OF THE AMERICAN PEOPLE REGARDING EDUCATION AS REVEALED BY STATE CONSTITUTIONAL PROVISIONS, 1776-1929

THE PROBLEM

ONE hundred twenty-eight state constitutions were adopted by the forty-eight states between 1776 and 1929. One hundred fifteen of these constitutions contained some reference to education. In addition, numerous amendments affecting education were passed during this period.

It is the purpose of this study to examine the constitutions and amendments referred to in the preceding paragraph, and to ascertain the provisions that have been made for education. Specifically, the study endeavors: First, to discover the ways in which the several states have made constitutional provisions for education along certain lines, such as state board of education, chief state school officer, county board of education, chief county school officer, land grants for common schools, state universities, state normal schools, state permanent common school funds, and state distributive common school funds, and the extent to which this has been done; second, to show the nature and trends of the development of these provisions, and, where possible, to indicate the significance of those trends.

CONCLUSIONS

1. One hundred fifteen of the one hundred twenty-eight constitutions adopted by the forty-eight states between 1776 and 1929 contain provisions relating to education. This study deals with those provisions, adopted during this period, which relate especially to the administration and maintenance of the public schools, and to the financial support of the universities and state normal schools. The inclusion of provisions of this character in the fundamental laws is indicative of an effort in the states where such provisions have been adopted to safeguard and promote the best interests of these institutions.

2. Nineteen of the forty-eight states have made constitutional provisions for state boards of education; thirty-seven, for chief state school officers; nineteen, for chief county school officers; and four, for county boards of education. These data are significant of a varying public opinion as to the advisability of

* By JOHN M. MATZEN, Ph.D. Teachers College, Columbia University, Contributions to Education, No. 462.

incorporating into the constitutions provisions for such school officials.

3. Twenty-nine of the forty-eight states received between 1802 and 1912 Federal land grants for common schools and state universities, and nine states received between 1899 and 1910 Federal land grants for state normal schools. These grants of land reveal a favorable attitude on the part of the Federal government toward the encouragement of state educational systems, and they reveal the time during which this attitude has prevailed.

4. Constitutional provisions have been made for state permanent and distributive common school funds in all but about half a dozen of the forty-eight states. The extension by constitutional provisions of the sources of these funds and the safeguarding of their use reflect a realization by the makers of our state constitutions of the growing importance of more adequate financial support for the public schools.

5. The recent constitutional provisions seem to include the opinion current at the time of their adoption as to what the statutory laws relating to the schools should be. Following such a policy of incorporating into the state constitutions the current opinion of what the statutory laws should be is likely to result in turning the fundamental law into a code of school laws, and hence in the incorporation into the constitutions of the states of whims and prejudices then extant.

6. The development of state and county boards of education and of chief state and county school officers, the creation of state permanent and distributive common school funds, and the changes made in the Federal land grant policy as revealed by this study seem to be significant of the American doctrine that education is a function of the state, and not of the nation, nor primarily of the locality.

7. The constitutional prescription of infinite details and of administrative machinery relating to education stands in the way of educational progress. Educational policies change with new developments in the field of education and therefore, it is believed, their development should not be restricted by incorporating them into the organic laws in which changes are made with difficulty. Instances in point are: (*a*) the California constitutional provisions of 1884, 1894, and 1912 requiring the compilation and adoption of a uniform series of textbooks for use in the schools of the state for four-year periods, without any alteration; (*b*) the fixing of the annual salaries of the chief state school officers in Georgia in 1877 at $2,000, and in South Dakota in 1889 at $1,800; (*c*) the limitation in the Kentucky constitution of 1890 and in the Alabama constitution of 1901 of the number of terms the chief state school officials may hold office; and (*d*) the provisions of the constitution of South Dakota, made in 1889, and that of New Mexico, made in 1912, that make the chief county school officers ineligible for reëlection after serving four years in succession.

8. On the basis of the facts disclosed by the critical analysis of the educational provisions in the constitutions of the several states, it is recommended that the provisions relating to education in state constitutions should be made very brief and general. For example, a state constitutional mandate requiring the legislature or general assembly to establish, organize, and maintain a system of public schools would, it is believed, be sufficient and desirable.

WRITTEN COMPOSITION INTERESTS OF HIGH SCHOOL PUPILS*

THE PROBLEM

THE problems of this investigation center around the English composition interests of pupils of junior and senior high school grades. The chief concern was to determine some of the topics which pupils prefer to use as subjects for compositions and to learn which types of written discourse are preferred by pupils from the seventh grade through the twelfth grade. Specifically, the object was to find answers to the following questions: What topics do pupils prefer to write about? Which types of discourse do they like? Are there sex differences in these interests? If so, what are they? Do interests tend to vary among different grade groups? If so, what are the variations?

PROCEDURE

To find an answer to the problem concerned with the topics pupils like to write about, two procedures were used. In the first, pupils were asked to write a composition upon a topic proposed by themselves. In the second, pupils wrote compositions upon topics taken from three lists presented to them. The same categories of interest were represented upon each list, but titles representing these categories varied with each list. The three lists of composition titles were used separately for three consecutive classroom assignments. Each pupil wrote a composition for each assignment upon a topic taken from the list, the title chosen being interpreted to indicate his interest.

Thirty-six broadly defined interests were represented. This number was arrived at by listing children's interests taken from researches in reading, science, etc., and by a classification of titles for compositions given in widely used composition textbooks. Once the categories were defined, nine competent judges rated ten titles for each category (1) for the accuracy with which any given title was related to its category and (2) for the suitability of any given title in so far as the general topic was within the experience of the pupils for whom it was intended.

On a form attached to each list pupils indicated the title they had used for their composition, the title liked next best, the title liked least or disliked most, and the title liked next least. From these preferences medians were computed for each interest and from the medians rank order lists were prepared by grades.

To determine the types of written discourse which pupils prefer, pupils indicate four choices of liked best, next best, least, and next least for the following ten types of written discourse: narration, description, exposition, argument, friendly letter, business letter, poetry, news article, editorial for school paper, debate brief.

RECOMMENDATIONS FOR TEACHERS

How may the results of this study be used to secure interest in improvement? The psychology of interest makes it important to know a pupil's interests and then to link the needed improvement to these interests as part of the development of facility in written composition.

* By J. H. Coleman, Ph.D. Teachers College, Columbia University. Contributions to Education, No. 494.

This investigation was made in order to gain a more definite picture of the nature of pupils' interests to which the teacher might relate the new material to be learned. The following recommendations are based upon pupils' interests, as revealed in this research.

An assignment intended to conform to pupils' interests would include a variety of specific topics. To give full play to interest, the assignment would permit writing on a topic suggested by the pupil; he may have a temporary interest about which he is eager to write.

When pupils were asked why they chose a particular topic, more than half of them gave one of two reasons, either of which clearly indicated that the pupil had some special knowledge about the topic of his composition. Three other reasons for writing are essentially the same—that is to say, pupils, when they choose topics for their compositions, write about topics within their experience. The practical question for the teacher, then, is to determine whether the topics she assigns are within the range of experience of her pupils—that is, whether they are too difficult or too abstract for them to handle.

There are teachers who, in assigning topics for written compositions, honestly attempt to offer topics which will interest pupils. In view of the lack of previous research, objective means of identifying interests have been limited. For the most part, the teacher has had to rely upon her own judgment to determine whether or not a topic fell within the range of the experience of her class, whether or not it was too dull. Whether a topic was too abstract or too difficult was a matter of subjective judgment. The lists of interests common to all grades provide an objective check for the topics in an assignment.

For the teacher who would explore the interests of her class in the various types of discourse, the lists of pupils' interests give definite information. The majority of boys and girls prefer: (1) the friendly letter, (2) argument, (3) description, and (4) narration in the order named.

TEACHERS COLLEGE *in the* NEWS

COMPILED BY CLYDE R. MILLER
DIRECTOR, BUREAU OF EDUCATIONAL SERVICE

"Teachers College, as an institution, holds no position, advocates no theory of education. It selects its faculty and, as every such institution must, permits each member untrammeled to present whatever his reflections and his researches lead him to believe."

From the *New York Times* Education Page—

America's School Policy Challenged

Professor Thorndike Asserts Compulsory Education Laws Are Defeating Their Aims

By EDWARD L. THORNDIKE

In all lands and at all times education has been distributed unequally. . . . With the aid of the Commonwealth Fund the Institute of Educational Research of Teachers College has followed the educational careers of 785 boys, constituting a representative sample of eighth-grade pupils in New York City in November, 1922. The years of schooling (of approximately 180 days each) varied from 6½ to 16½. . . . The age of leaving school permanently varied from 13 to 25. If the sampling had been taken for an age or for a much lower grade, the variation would have been even greater. Even in our sample, some boys have two and one-half times as many years of schooling as others have.

The inequalities become even more striking if we make allowance for the fact that a day's schooling at age 6 means something very different from a day's schooling at age 16, and something of much less importance, at least for intellectual education. Those who have the least education have it at the youngest ages and so are at a double disadvantage.

The general spirit of our country for the past 100 years has been to make great efforts to increase the amount of education, but to pay relatively little attention to its distribution. The plea of reformers has been for more education, regardless of who received it. There has been an indiscriminate urge toward more schools, longer school years, and later compulsory ages. Education of any sort for any person has been recommended as a national investment without much consideration of the differences in safety and income which may attach to the investment in certain boys and girls rather than in others. The mere volume of education has been taken as a measure of idealism, somewhat as the mere volume of gifts to beggars of all sorts used to be taken as a measure of philanthropy and charity. . . .

It may be doubted whether either the policy of striving for indiscriminate increase in the volume of education, or the policy of favoring especially those who would otherwise have very little schooling, was ever the best for the general welfare. A very strong argument could have been made at any time in the last half-century for exercising careful discrimination in the distribution of education, giving the most to those who would use it best for the common good.

And a fairly strong argument could have been made that those who would use more education best for the common good would be those who already had a great deal of it—for example, promising young students of science who, with more education, might make discoveries of great benefit to the world,

or promising young physicians, clergymen, engineers, and the like, who, with more education, might serve their communities much better. . . .

The question "Who are receiving the most education?" is not answered adequately by answering the questions "Who go to college?" "Who go to high school?" "Who attend medical schools?" or any other questions that ask who receive certain higher levels of education. . . .

Let us consider the 785 boys that are a fair sampling of all boys in grade 8B in public schools in New York City ten years ago. . . .

I have examined the later school careers of the forty boys who had the forty highest scores of the entire 785 in abstract intellect and early school achievement, and also the school careers of the forty boys who had the forty lowest records of the 785. The ablest twentieth averaged only four months older than the least able twentieth when they left school. The ablest twentieth had three semesters (i.e., a year and a half) more schooling, of which roughly one year is due to their entering school earlier and a half-year to their staying to an age four months older. . . .

The ablest twentieth reaches a status four full-year grades in advance of the least able twentieth at an age only four months greater. Their average is high school graduation; that of the low twentieth is graduation from the eighth grade. Twenty-nine of the ablest forty graduated from high school; only one of the low forty did.

The findings should force a thoroughgoing consideration of policies regarding the distribution of education. There are no adequate reasons for supposing that the case for the country at large is notably better than that for New York City. . . . I believe that New York has been ahead of the country at large in providing educational opportunities and encouragement for able boys and girls. So I fear that the general status of distribution may be worse. Present distributions are surely bad.

It certainly is not reasonable that the intellectually ablest 5 per cent of boys should be kept in school to an age only four months beyond that to which the least able are kept. Suppose that we had 80 years of schooling to distribute among these 80 boys. Surely, it would be wasteful and essentially unjust to give each boy one year more. More schooling of the sort they have had will make the low twentieth very little happier or more useful. But it can be guaranteed that two years more for some of the top twentieth would enrich their individual lives and produce substantial benefits to the community. Indiscriminate advances in the compulsory school age beyond 16 seem, in view of the actual facts, a weak and wasteful procedure.

And what shall we say of laws or customs which systematically and emphatically distribute the most schooling to those least able to get profit by it for themselves or for the community? Are they not intolerably unwise and unjust? Yet they have been very common. Thus, a child of a certain age, say 14, is allowed to go to work if he has reached a certain advanced stage, say graduation from grade 8; but if he has only reached, say grade 5, he must be given more schooling. Of our 40 specially able boys, five left school before they were 15; not one of the dull 40 did. We need laws to prevent greedy or perverse parents from depriving gifted children of schooling, not laws to force them to keep in school children who have neither the ability nor the interest to profit thereby.

The problem of providing schooling in some reasonable relation to the intellectual ability of the recipients is only one part of the general problem of the quantitative distribution of education. It would be a very inadequate treatment of the matter to use intellectual superiority alone as the measure of fitness for more education. Moreover, the problems of the qualitative distribution of education are at least as important as those of quantity. We have to ask not only "How much schooling shall each sort of individual receive?" but also "What kind of schooling shall it be?" . . .

Zeal to produce more schooling—that is, to increase the amount of schooling given in our country—has been one of America's fine idealisms. Such zeal should be maintained, but with it there should be equal zeal to distribute this education so that those will have most who can use it best. What evidence we now have indicates that the ablest receive very little more than the least able.

For every boy in the top 40 of our 785 who stayed in school beyond the age of 18 there were nearly ten boys below average ability who did so. The passion for equalization which had a certain nobility when a large percentage of children barely learned to read and write becomes unwise, almost ridiculous, when the question is of spending our resources to keep in school boys of 16 or 17 or 18 who would be happier and more useful at work or at play. Our increased resources should be used first to aid young men and women whom nature and nurture have chosen to profit from schooling.

Doubtless great ability will often manage to get education outside of schools or get along without it. But those who can do so much for the world with so little are the very ones who should be given more. In the wars we are incessantly waging against disease, misery, depravity, injustice, and ugliness, we should not provide our best marksmen with the poorest weapons nor ask our bravest to fight with their naked hands.

From the *New York Times* Education Page—

Vision of a New Age Urged in Education

By George S. Counts

If progressive education is to fulfill its promise, it must lose some of its easy optimism and prepare to deal more fundamentally, realistically, and positively with the American social situation than it has done up to the present moment. . . .

The great weakness of progressive education lies in the fact that it has elaborated no theory of social welfare, unless it be that of anarchy or extreme individualism. In this, of course, it is but reflecting the viewpoint of the members of the liberal-minded upper middle class who provide most of the children for the progressive schools—persons who are fairly well off, who have abandoned the faiths of their fathers, who assume an agnostic attitude toward all important questions, who pride themselves on their open-mindedness and tolerance, who favor in a mild sort of way fairly liberal programs of social reconstruction, who are full of goodwill and humane sentiment . . . but who, in spite of all their good qualities, have no deep and abiding loyalties, who possess no convictions for which they would sacrifice overmuch, who would find it hard to live without their customary material comforts, who are rather insensitive to the accepted forms of social injustice, who are content to play the rôle of interested spectator in the drama of human history, who refuse to see reality in its harsher and more disagreeable forms, who are horrified at the thought of revolution in the twentieth century, and who in the day of severe trial will follow the lead of the most powerful forces in society and at the same time find good reasons for so doing.

These people have shown themselves entirely incapable of dealing with any of the great crises of our time—war, prosperity, or depression. At bottom they are romantic sentimentalists. That they may be trusted to write our educational theories and shape our educational programs would seem to be highly improbable.

Among the members of this class the birthrate is low, the number of children small, the income relatively high, and the economic functions of the home greatly reduced. For this reason an inordinate emphasis on the child and child interests is entirely welcome to them. They wish to guard their offspring from too strenuous endeavor and

from coming into too intimate contact with the grimmer aspects of industrial society.

Moreover, they wish their sons and daughters to succeed according to the standards of their class and to be a credit to their parents. Also, at heart feeling themselves members of a superior breed, they do not want their children to mix too freely with the children of the poor or of the less fortunate races. . . .

If progressive education is to be genuinely progressive, it must emancipate itself from the influence of this class, face squarely and courageously every social issue, come to grips with life in all its stark reality, develop a realistic and comprehensive theory of welfare, fashion a compelling and challenging vision of human destiny. . . . In a word, progressive education cannot build its program out of the interests of children; it cannot place its trust in a child-centred school.

The need of the founding of progressive education on an adequate social theory is peculiarly imperative to-day. We live in troublous times; we live in an age of profound change; we live in an age of revolution. Indeed, it is highly doubtful whether man ever lived in a more eventful period than the present. . . . To-day we are witnessing the rise of a civilization quite without precedent in human history—a civilization which is founded on science, technology, and machinery, which possesses the most extraordinary power, and which is rapidly making of the entire world a single great society. . . .

In this new world that is forming, there is one set of issues which is peculiarly fundamental and which is certain to be the centre of bitter and prolonged struggle. I refer to those issues which may be styled economic. President Butler has well stated the case:

"For a generation and more past," he says, "the centre of human interest has been moving from the point which it occupied for some 400 years to a new point which it bids fair to occupy for a time equally long. The shift in the position of the centre of gravity in human interest has been from politics to economics; from considerations that had to do with forms of government, with the establishment and protection of individual liberty, to considerations that have to do with the production, distribution, and consumption of wealth."

Consider the situation in which we find ourselves to-day. How the gods must laugh at human folly! . . . Here is a society in which a mastery over the forces of nature surpassing the wildest dreams of antiquity is accompanied by extreme material insecurity; in which dire poverty walks hand in hand with the most extravagant living that the world has ever known; in which an abundance of goods of all kinds is coupled with privation, misery, and even starvation; in which an excess of production is seriously offered as the underlying cause of severe physical suffering; in which breakfastless children march to school past bankrupt shops laden with rich foods gathered from the ends of the earth; in which strong men by the million walk the streets in a futile search for employment and with the exhaustion of hope enter the ranks of beaten men; in which so-called captains of industry close factories without warning and dismiss the workmen by whose labors they have amassed great fortunes through the years; in which automatic machinery increasingly displaces men and threatens the economic order with a growing contingent of the permanently unemployed; in which racketeers and gangsters with the connivance of public officials fasten themselves on the channels of trade and exact toll at the end of the machine gun; in which economic parasitism, either within or without the law, has become so easy for the cunning and the ruthless that the tradition seems to be taking root that "only saps work." . . .

One can only imagine what Jeremiah would say if he could step out of the pages of the Old Testament and cast his eyes over this vast spectacle so full of menace and of promise.

But the point should be emphasized that the present situation is full of promise, as well as menace. Our age is literally pregnant with possibilities.

There lies within our grasp the most humane and majestic civilization ever fashioned by any people. At last men have achieved such a mastery over the forces of nature that wage slavery can follow chattel slavery and take its place among the relics of the past.

If we are to believe one-half of what our engineers tell us, the full utilization of modern technology should enable us to produce several times as much goods as were ever produced at the very peak of prosperity, and with the working day, the working year, and the working life reduced by half. In other words, we hold within our hands the power to usher in an age of plenty, to make secure the lives of all, and to banish poverty forever from the land.

The achievement of this goal, however, would seem to require fundamental changes in the economic system. . . . Obviously the growth of science and technology has reached a point where competition must be replaced by cooperation, the urge for profits by careful planning, and private capitalism by some form of socialized economy.

Changes in our economic system will of course require changes in our ideals. The individualism of the pioneer or the farmer, produced by free land, great distances, economic independence, and a largely self-sustaining family economy, is already without solid foundation in either agriculture or industry. The free land has long since disappeared, the great distances have been shortened immeasurably by invention, the economic independence survives only in the traditions of our people, and the self-sustaining family economy has been swallowed up in a vast society which even disregards the boundaries of nations. Already we live in an economy which in its functions is fundamentally coöperative. There remains merely the task of reconstructing our economic forms and of reformulating our social ideals so that they may be in harmony with the facts of life.

While in the present paper attention is centred on the economic question, our educational theory will have to embrace the entire range of life. It will have to deal, not only with labor and income and property, but also with leisure and recreation, sex and family, government and public opinion, race and nationality, war and peace, art and esthetics.

When I say that progressive education should face all of these questions I do not mean merely that provision should be made in our progressive schools for children to study the problems of economics, government and so on. This much of course should be done. But . . . to my mind a movement honestly styling itself progressive should engage in the positive task of creating a new tradition in American life—a tradition possessing power, appeal, and direction. James Truslow Adams has pointed out in his *Epic of America* that our chief contribution to the heritage of the race lies not in the field of science, or technology, or politics, or religion, or art, but rather in the creation of what he calls the "American dream"—a vision of a society in which the lot of the common man will be made easier and his life enriched and ennobled.

If this vision has been a moving force in our history, as I believe it has, then why should we not set ourselves the task of reconstituting and revitalizing it? This would seem to be the great need of our age, both in the realm of education and in the sphere of public life, because men must have something for which to live.

From the *Boston Evening Globe*—

School for Slackers

As often as any pet popular delusion is neatly punctured with a pin of sharp analysis, that pin is likely to be found between the thumb and forefinger of some professor in Teachers College, Columbia University. The victim this time is that old wheeze about the character training value of athletics.

"Coaches of athletics," observes Mr. William L. Hughes, associate in physical education, Teachers College, "have had

a blind and fervent faith that they were contributing in some way to character development," but he adds that they are excessively vague as to just where these rugged virtues appear. In fact, "no definite procedure of fostering right conduct has ever been devised," and he might have gone on to say that our era is peculiar in having questioned nearly every accepted criterion of right conduct. He concludes that "it is perhaps too much to expect present-day coaches under the prevailing system to accomplish much excepting accidental or incidental teaching of character."

Athletes, for all the popular worship they receive, have been rather poorly thought of in certain high quarters. Plato noticed that the professional variety made poor soldiers, and treated them roughly in his *Republic*. But we have no need to go back to Plato. Our own fathers and uncles viewed the rise of athletics with a sardonic eye, remarking coldly that the equivalent physical and moral discipline could be had by hoeing corn, besides helping toward a son's upkeep. They were willing to allow that hoeing corn might not be as much fun as football. But perhaps these sarcastic parents were no nearer right than the coaches, for their eternal dinging and nagging at sons to do chores produced rebellious urchins who made secret resolutions to get out of doing chores for the rest of their lives, and kept those resolutions.

Yes, Mr. Hughes is right. No one knows whether or how far athletics develop character. But one thing is certain. An overdose of chore substitutes for athletics in youth develops the rugged virtue of learning how to skin out of doing disagreeable jobs. The value of that lesson cannot be overestimated.

From the *New York Times*—

Asks "Social" Saving Be Taught to Child

The importance of teaching children the necessity of orderly and planned saving, not only from the individual but from the social standpoint, was stressed by Professor Harold F. Clark of Teachers College, Columbia University, one of the speakers at a symposium held recently by the Child Study Association of America. The subject of the symposium was "Children and Money."

Questions such as "the amount of allowance a child should have, when it should begin, responsibility over it and the necessity of giving the child some conception of the value of money" deal primarily with the individual child's immediate welfare, Dr. Clark asserted. Another question of equal, if not more, importance, he said, was that of "the broader social outlook of effects of money and what a child should know concerning them."

"It has been historically an accepted doctrine in America that the more one saved the better off he and the country were," he continued. "Very few competent economists to-day will be willing to state that for every one to double his amount of savings in 1932 will be desirable either socially or from the long-term standpoint individually. The training that most Americans have had has been too narrowly individualistic to work in the fourth decade of the twentieth century."

Because of the highly interdependent economy in which we live at present, Dr. Clark said, "a sudden and great increase of saving would do nothing but throw additional tens of thousands of people out of work. This is not a plea for no saving. It is a suggestion that the child will have to be taught the social aspects of saving and its importance in an interdependent credit economy."

Stressing the fact that most economists are agreed that the present monetary system is unsatisfactory, Dr. Clark said that it was "far more important to teach the child some of the social implications of an unstable monetary unit such as we have than it is to teach him most of the individualistic things that we have taught him."

From the *New York Times* Education Page—

School Gains Go on in the Lean Years

Records of Severe Depressions of the Past Show Education Keeping Up Its Advance

By Edgar W. Knight

The American people have established a tradition of passing through depressions with their faith in education undiminished. Whether that tradition will be maintained fully this time, we cannot know until after the crisis is over and comparable statistics have been collected, but a look at the past gives ground for hope. There have been a dozen well-marked economic crises or "temporary dislocations" in the last century, every one of them accompanied by a curtailment of production, falling prices, unemployment, and so on. Yet in the major slumps education made distinct gains.

The crisis of 1837 is generally considered to have been particularly severe. It continued into the early or middle '40s. A large number of factories closed, more than 600 banks failed, some States repudiated their bonds and some declared a moratorium on private debts. Cities were filled with unemployed, poorhouses were crowded, food riots were frequent.

Educational statistics for the '30s and '40s comparable with those of to-day are lacking, but it is clear that this period witnessed a most remarkable educational awakening. Departments of education were organized for the first time in many Eastern and Middle Western and a few Southern States, with provision for State support and supervision of public schools. Normal schools, teachers' institutes, and other means of training teachers were established in New England and New York; educational conventions were formed, educational journals multiplied, and publicity and propaganda were vigorously used in all the old and most of the new States to clear away the stubborn obstructions that had so long blocked the progress of public education.

Almost everywhere educational interest and effort enlarged. The most conspicuous revival appeared in New England. Horace Mann and his coworkers stirred Massachusetts deeply in behalf of education. Henry Barnard and his associates were performing similar services in Rhode Island and Connecticut. New York, New Jersey, and Pennsylvania responded to the spirit of the educational awakening. In Ohio, the legislature was digesting the influential report of Calvin E. Stowe, an energetic educational pioneer, which it had requested him to make on educational conditions in Europe, and had 10,000 copies printed for distribution throughout the State. The legislatures of Massachusetts, Michigan, Pennsylvania, Virginia, and North Carolina reprinted and distributed the report.

For the depression of 1873 there are records to show the growth of educational interest and effort. Attendance increased from 4,745,000 in that year to 5,291,000 three years later, while expenditures for schools rose from $76,238,000 to $83,083,000—although a slight lag appeared in expenditures toward the end of the depression. The general trend of the period may be seen in the increase in value of all school property, which stood at $130,000,000 in 1870, and reached $192,000,000 in 1875. The average school term also was steadily increased from 129.1 days in 1873 to 132 in 1878.

This depression was marked by reforms in the constitutional and legislative provisions for schools. Compulsory school attendance laws were widely enacted and strengthened, especially in the Northeastern and Eastern States. Public high schools (following the very important decision in the Kalamazoo case in 1874) came into prominence in most of the States outside the South and were rapidly recognized as the logical educational link between the elementary schools and the higher institutions.

We have a similar record of progress for the lean years that followed 1893.

The attendance, which was 8,837,000 in that year, had increased to 9,549,000 in 1895, and to 10,356,000 in 1898. Expenditures grew from $164,171,000 to $194,293,000 in the same years, and school property and the length of the school term likewise increased.

This period is notable for the widespread efforts to improve teaching. Normal schools were established and plans for certificating teachers were made. Even retirement arrangements for teachers were considered and some actually made. It was a period, too, which saw increased attention paid to some of the more modern developments in education. Curriculum construction received more notice, the free public library movement gained strength, the public high school had an almost phenomenal growth and higher educational facilities were extended. Compulsory school attendance legislation also widened, especially in the West, while school supplies were made free in some of the more favored places.

In 1907, when another depression began, still more progress was recorded. The school term increased from 151.8 days to 155.3 in 1909, and attendance and school expenditures made sizable gains. Even the South, where, following the Civil War, recuperation and reconstruction had naturally been slow, was the scene of an important and widespread educational awakening in this depression, largely through the Conference for Education in the South. At this time, in fact, the spread into the South of many of the developments made earlier in other parts of the country helped notably to reduce the unevenness in the growth of our educational structure.

From the *New York Sun*—

Junior High Needed

As Agency to Test Abilities of Students, Says Dr. Briggs

The ideal junior high school, which would assort its students according to ability and aptitude, is the "organization key" to the reorganization of secondary education, in the opinion of Dr. Thomas H. Briggs, professor of education at Teachers College, Columbia University.

"Industry," said Dr. Briggs at a meeting of the department of secondary school principals, "decreasingly needs or will use youth. Every one that enters on a job displaces an adult and intensifies unemployment. Inevitably, then, we are forced to types of secondary education appropriate to the capacities, aptitudes, and probable needs of all youth. The necessity for an emphasis on education for the satisfactory use of increasing leisure time is manifest.

"The organization key to the problem is an ideal junior high school, which, while providing an education of assured worth, will effectively sort youth into higher curricula for which each one is by nature and training fitted. Then, and only then, can satisfactory thoroughness and rapidity of advancement be expected."

COLLEGE & ALUMNI NOTES

COLLEGE NOTES

Educational Administration

The Administration Club held a meeting on Saturday evening, March 19, at the home of Professor and Mrs. George D. Strayer. Professor Jesse H. Newlon, director of the Lincoln School, discussed curriculum trends in the progressive school. A discussion of various phases of the subject followed Professor Newlon's presentation.

Professor Strayer spoke at the section meeting of the Associated School Boards and Trustees of the State of New York, held on Thursday, April 7, in Mount Vernon. His subject was "Financial Aspects of the School Program under Present Conditions."

Professor Paul R. Mort addressed the Eighteenth Annual Conference of the Massachusetts Superintendents of Schools April 20 and 21 on "Fundamental Principles Underlying the Financial Support of Schools," "The Financing of a Highly Cultural Level in American Democracy," and "Local Control and Initiative as Related to the Safeguarding of Funds."

Conferences were held in Professor Strayer's office April 18 to 22 among the members of the Chicago school survey staff. These conferences were of a preliminary nature, leading to the final organization and writing of the survey report.

Professor Carter Alexander contributed to *The Nation's Schools* for March, 1932, an article entitled "Can a School Executive Afford to Ignore the Law?"

Professor John K. Norton has been appointed an adviser on the research staff of the National Survey of School Finance.

Advisers of Women

The officers of the Advisers Club for the Spring Session are as follows: President, Miss Vera Jurz, formerly educational director in Christ Church, Madison, Wis.; vice-president, Miss Helen Reeve, assistant dean and head of residence, Indiana State Teachers College, Terre Haute, Ind.; secretary, Miss Mabel Madsen, assistant to the dean of women, State College, Pullman, Wash.; treasurer, Miss Ruth T. Miler, teacher of mathematics, Fairfield, Calif.

Early in the semester the Advisers Club entertained at luncheon several of the deans of women who were return-

ing from the annual meeting of the National Association of Deans of Women. Among the guests were Miss Florence Nicholson, acting dean of women at Lawrence College, Appleton, Wis.; Mrs. Geraldine Green, dean of women at West Texas State Teachers College, Canyon, Tex.; Miss Eliza Butler, head of Johnson Hall, Columbia University; and Mrs. Genevieve Turnipseed, director of housing, University of Oregon, Eugene, Ore.

Dr. Juliana Haskell, adviser to graduate women at Columbia University, addressed the Advisers Club March 10 on "The Ethical Aspects of the Problem of Women in Higher Education"; on April 14 Dr. Mary Lyman of the Union Theological Seminary spoke on "The Place of Religion in Modern Life."

Professor Sarah M. Sturtevant has given a series of lectures during the current semester on "Counseling Techniques" before a group of graduate nurses at Bellevue Hospital. She spoke also on April 16 before the National Conference of Camp Fire Executives in New York on "Those Who Lead." On April 13 she addressed the round table of the House Directors of New York City on "The Personal Needs of the Girl as Factors in Building Satisfactory Social Relations."

Miss Adele Bildersee, dean at Brooklyn College, and Miss Dorothy Stratton, dean of girls at San Bernardino High School, San Bernardino, Calif., and Felix Warburg Fellow at Teachers College during the spring of 1931, who have majored in the field of Advisers of Women and Girls, have recently completed their dissertations. Miss Bildersee investigated "State Scholarship Students at Hunter College of the City of New York"; Miss Stratton studied the "Problems of Students in a Graduate School of Education."

Dr. Ruth V. Pope, whose study of "Factors Affecting the Elimination of Women Students" has recently been published by the Bureau of Publications, has been appointed academic dean at Hood College, Frederick, Md., for the coming year.

Child Development Institute

Professor Lois Hayden Meek has an article entitled "The Child, The Family, and Education" in Volume X of *The New Wonder World*, published by Shuman. "How Parents Look to the Little Child," by Professor Meek, appeared in the April issue of *Child Study*.

Professor Meek spoke on the program of the Fifth Annual Mid-West Education Conference held April 1 and 2 in St. Louis. She took part in the round table on preschool and parental education, discussing from the point of view of the psychologist. She also gave two talks entitled "What the Scientific Study of Young Children Has to Contribute to Parents and Teachers" and "Social Change, the Family, and Education."

Miss Grace Langdon contributed an article entitled "Sex Education of Children" to the February issue of *The Parents' Magazine*.

Dr. Ruth Arrington's dissertation, *Interrelations in the Behavior of Young Children*, has been published by the

Bureau of Publications, Teachers College, as Child Development Monograph No. 8.

Mr. Ralph P. Bridgman is one of the contributors to the March issue of *The Annals* of the American Academy of Political and Social Sciences, which is devoted to the family. The title of Mr. Bridgman's article is "Guidance for Marriage and Family Life."

Curriculum

Professor and Mrs. Harold Rugg are spending six months in the Orient studying the educational theory and philosophy of Oriental peoples. Professor Rugg will join the staff again for the Winter Session of 1932-33.

Professor L. Thomas Hopkins finishes in May an extension course in curriculum construction at Wilmington, Del.

Professor H. B. Bruner and Professor Hopkins spent two weeks in March in Chicago, studying the curriculum problems of the Chicago City Schools in connection with the survey being conducted there by the Division of Field Studies of the Institute of Educational Research, Teachers College.

Professor Bruner spent the last week of April in Fort Worth, Tex., in connection with his duties as curriculum consultant to the Board of Education there. During the year he has made trips to Pottstown and Pottsville, Pa., working with different aspects of the curriculum programs under way there.

Mr. Arthur V. Linden was in Allegany County, Md., the week of March 28, working with committees in establishing a science curriculum for the elementary and junior high school grades.

In June a special curriculum course will be offered for either two or four points. The work will be conducted by Professors Bruner, Cora M. Winchell, and Sallie B. Tannahill, assisted by Miss C. Mabel Smith, former director of curriculum at Houston, Tex.; Mr. Linden; Mr. E. E. McCarty, assistant superintendent and director of curriculum in elementary education, Miami, Fla.; Miss Eleanor Johnson, assistant superintendent in charge of curriculum construction, Lakewood, Ohio; and Miss Mabel Cassell, course of study writer, Houston, Tex. A special study will be made during this course of the contacts and contributions of home economics and the fine arts, especially in the elementary and junior high school grades. Groups of students interested in home economics and the fine arts will hold discussions with able supervisors, principals, and course of study makers in other fields, for the purpose of discovering better methods of developing and integrating materials of these two fields with those of the social studies. Special laboratory work will be offered under Professor Winchell and Professor Tannahill.

The Curriculum Division will experiment with a new type of course during the Winter and Spring Sessions of 1932-33, Education 211Ma-212Ma, The Curriculum, in which problems of contemporary civilization and educational issues will be discussed, together with their bearing on curriculum making. A round table procedure will be followed throughout this course, which will be conducted as an experiment in faculty group

thinking and discussion. The aims will be: first, to present the significant social, economic, aesthetic, political, and educational problems with which people are now faced; and second, to determine what the curriculum is doing about these problems and what it can do. Each of the fourteen professors, lecturers, or advisers, participating in the course will attend as many meetings as possible. Their responsibilities will vary. Some will assist in the discussions and others will act as advisers to small groups of students who may wish to follow up some of the points raised in the discussions. Those participating in the course will be: Professors Bruner, Hopkins, Rugg, Rollo G. Reynolds, Newlon, Charles C. Tillinghast, Harold F. Clark, Winchell, Tannahill, Edmund deS. Brunner, and Paul R. Hanna, and Dr. James E. Mendenhall, Mr. Linden, and Mr. Samuel Everett.

Educational Measurement and Research

Professor W. A. McCall has collaborated with the New York State Literacy Commission in preparing literacy tests for voters in the coming presidential election. He has recently participated in conferences of the American Standards Association. He is engaged with his classes in formulating quantitative methods of studying philosophical problems and in constructing tests of certain philosophical ultimates, such as the happiness of children in school.

Professor McCall has edited, with the assistance of the editorial staff named below, the first forty of the Teachers' Lesson Units (listed elsewhere in THE RECORD) and sundry unlisted Students' Lesson Units: Lelah Mae Crabbs, Ph.D., Associate Editor; Claire Zyve, Ph.D., Editor, Dramatic Hours in History; Effie G. Bathurst, Ph.D.; Sara B. Brumbaugh; Helen Christianson; Herbert A. Falk; Harold C. Hand; Alberta Munkres; Agnes Snyder, Ph.D.

Educational Psychology

Professor E. L. Thorndike gave an address on the "Distribution of Education" at the dedication of the Education Building of the University of Chicago on March 14. He received the degree of Doctor of Science from the University of Chicago at the Convocation on March 15.

On Sunday evening, April 10, Professor A. I. Gates presented the topic "Reading in the Modern Elementary School" over the National Broadcasting Company network. This was the first talk in a series on "Methods of the Modern School," arranged by Miss Florence Hale, president of the National Education Association.

Professor Gates spoke before the teachers and supervisors of the elementary schools of Detroit, Mich., April 20, on the topic "Instruction in Reading in Progressive Schools."

During the annual Conference on Educational Measurements and Elementary Supervision held at the University of Indiana, April 21-23, Professor Gates made five addresses as follows: "Functions of the Future Teacher Suggested by Recent Research"; "Experimental and Critical Appraisals of Certain Progressive Methods"; "Improved Methods Suggested by Recent Research"; "Newer

Methods and the General Objectives of Education"; "Recent Investigations of Instruction in Spelling." Professor Gates also spoke before the teachers and supervisors of the elementary schools of Bloomington, Ind., on "Improved Methods of Teaching Reading."

Educational Sociology

Professor David Snedden addressed the Suffern Parent-Teacher Association February 18 on "The Parent-Teacher Association and Vocational Effectiveness."

During the Atlantic City home economics meeting on March 10 Professor Snedden spoke on "Differentiating Objectives and Locations of Cultural Home Economics from Vocational Homemaking." At the eighth Annual Junior High School Conference, held at New York University on March 18 and 19, he addressed the round table meeting which dealt with The Sociologist's Contributions to Methods on "Plans for Balancing and Integrating Our Rich Programs of Junior High School Offerings."

Professor Snedden spoke at the luncheon meeting of the New Jersey Vocational and Arts Association, which met in Asbury Park March 19, on "Keeping up With the Times in Vocational and Arts Educations." He spoke over the radio on March 27 under the auspices of the National Advisory Council on Radio in Education on "Education and Training for the Job."

Elementary Education

Professor E. H. Reeder addressed the Champlain Valley Teachers Association Institute in Burlington, Vt., March 11. He spent March 17, 18, and 19 in Birmingham, Ala., at the meeting of the Alabama Education Association, where he addressed the Supervision, Upper Elementary Grades, and Teacher Training sections, and was the guest of the local Teachers College Club at its banquet on March 19.

English

Professor Ida A. Jewett talked to the junior high school teachers of English of New Rochelle at the Isaac E. Young Junior High School March 16. The talk was followed by a stimulating discussion of Professor Jewett's proposals.

Fine Arts

Fine Arts for Public School Administrators, by Professor Sallie B. Tannahill, has been published by the Bureau of Publications of Teachers College. This is one of the series of books prepared by members of the College staff especially for administrators.

Mrs. Ruth R. Tregenza is conducting an extramural class in home furnishing during the Spring Session. It meets in Yonkers every Wednesday.

An interesting exhibit of school work of Mexican children between the ages of six and fifteen years, done under the direction of Señor Juan L. Olaguibel, chief of art instruction for the Mexican Government, was held during the latter part of March in the Fine Arts studios.

Professor Belle Boas gave a talk on "Methods of Leisure" at the Junior High School Conference held March 19 at New York University.

Guidance and Personnel

The American Library Association has exhausted the first edition of ten thousand copies of *Vocational Guidance Through the Library*, by Dr. Harry Dexter Kitson, originally published in 1931, and is issuing a revised edition this month.

In honor of the election of Miss Mildred E. Lincoln, visiting instructor, to the presidency of the National Vocational Guidance Association, the Teachers College branch of the Association held a dinner meeting in John Jay Hall on Thursday, March 17. Fifty-eight guests were present, including a number of representatives of the New York City branch of the National Vocational Guidance Association.

After the dinner, a series of thirteen five-minute speeches was given. Miss Mary A. Comer, chairman of the program committee, served as toastmistress. At the conclusion of the speeches Miss Lincoln briefly outlined some of her plans for the work of the Association during the coming year.

Household Arts

Professor Benjamin R. Andrews spoke before the New York Association of Juniata College Alumni April 7 at the Barbizon Hotel, New York City. He addressed the Western Pennsylvania Education Conference at Pittsburgh April 16 on "Present Economic Conditions as They Relate to Home Economics."

At the twelfth annual meeting of the New York State Home Economics Association, which was held at the Hotel Roosevelt, March 28 and 29, Professor Anna M. Cooley was chairman of the Program Committee, and presided at one of the meetings. Dr. Mary de Garmo Bryan was toastmistress at the luncheon, at which brief addresses were made by the following members of the Teachers College staff: Professor Andrews, Professor Cora M. Winchell and Professor May B. Van Arsdale. Professor Andrews presided at the general meeting at which the relation of home economics to the current industrial situation was discussed. Professor Paul R. Hanna of the Lincoln School spoke at another session on adjusting the school program of home economics teaching to the present situation.

The Home Economics Association of Greater New York held a meeting March 8 at Teachers College. Dinner was served in Whittier Hall, after which the members of the Association were guests of the Cookery department for after-dinner coffee. At the evening meeting Miss Van Arsdale spoke on "Whither Women?"

Miss Anna Barrows who has spent the winter at Teachers College has left for her home in Fryeburg, Me.

Latin

Professor W. L. Carr organized and conducted a round table discussion for teachers of Latin at the eighth annual Junior High School Conference held under the auspices of the School of Education of New York University on Saturday, March 19. The general topic of the round table was "How Teachers of Latin in the Junior High School are Meeting

the Challenge of the New Age." Specific topics discussed were: (1) Problems in the Organization of a Latin Syllabus for Junior High Schools of New York City. (2) The Use of Oral Latin in the Junior High School. (3) The Use of Realia in Teaching Junior-High-School Latin. (4) Gaining and Holding Interest in Junior-High-School Latin.

Professor Carr attended the twenty-eighth annual meeting of the Classical Association of the Middle West and South, held at Cincinnati March 24, 25, and 26, as representative of the American Classical League, of which he is president. Professor Carr was Secretary-Treasurer of the Classical Association of the Middle West and South from 1923 to 1930.

Professor Carr is serving on a committee under the chairmanship of Dr. Jacob Greenberg, director of foreign languages in the junior high schools of New York City, which is preparing a syllabus for the teaching of Latin in the junior high schools of the city schools.

Library

The following is a selection from *Stray Library Leaves* of the 1931 and 1932 publications in education and related fields which have been added to the Teachers College Library during the past month.

ELEMENTARY EDUCATION

Cox, P. W. L. and Long, T. C. Principles of Secondary Education. Heath.

Webb, L. W. and Shotwell, A.M. Standard Tests in the Elementary School. Long and Smith, New York City.

HIGHER EDUCATION

American Council on Education. American Universities and Colleges. 1932. Williams and Wilkins, Baltimore, Md.

EDUCATION—GENERAL

Adams, J. E. and Taylor, W. S. Introduction to Education and the Teaching Process. Macmillan.

Council of Christian Education. The Ideal "Agreed" Syllabus of Religious Instruction. Author, Memorial Hall, London.

Council of Christian Education. Religious Instruction in Provided Schools in England and Wales. Author, Memorial Hall, London.

Horne, H. H. Democratic Philosophy of Education. Macmillan.

Who's Who in American Education. 296 Broadway, New York City.

Wrenn, C. G. Practical Study Aids. Stanford University Press.

SECONDARY EDUCATION

Washington State Department of Education. Manual for Junior High Schools. Jay Thomas, Olympia, Wash.

OTHERS

Cowley, W. W. Personnel Bibliographical Index. Bureau of Educational Research. Ohio State University, Columbus, Ohio.

Keynes, J. M. Essays in Persuasion. Macmillan.

Kitson, H. D. I Find My Vocation. McGraw-Hill.

National Organization for Public Health Nursing. Principles and Practices in Public Health Nursing. Macmillan.

Owen, S. G. (Ed.) The Year's Work in Classical Studies. Arrowsmith.

Weiss, G. M. Survey of Nursing Education. University of Toronto Press.

Music

The following program was given under the auspices of Beta Gamma Chapter of Phi Mu Alpha Sinfonia on Wednesday, March 30, in the Grace

Dodge Room, by Samuel W. Spurbeck (first violin), George Barth (second violin), Etzel Wilhoit (viola), Walter Potter (cello), and Gerald Tracy (piano):

Quartette in D Minor, Opus 76, No. 2 Haydn

Allegro
Andante, allegretto
Minuetto (canon infini)
Vivace Assai

Quintette in E Flat Major, Opus 44 Schumann

Allegro brilliante
In Modo D'una Marcia
Scherzo: Molto vivace
Allegro ma non troppo

At the concert and dance given by Phi Mu Alpha Sinfonia April 23 the main musical offering was the first performance of two movements of a string quartet written by Mr. Howard A. Murphy, instructor in theory in the Music Education department.

On Saturday, April 2, an orchestral concert was given by the combined orchestra of high school students and members of the advanced instrumental groups, under the auspices of the class in advanced instrumental conducting. Members of the class also conducted portions of the program. The complete program follows:

Marche Militaire Francaise...Saint-Saëns
Symphony No. 4 in B flat major, Op. 60 Beethoven
Suite from "Sigurd Jorsalfar," Op. 56 Grieg
Capriccio Espagnol, Op. 34 Rimski-Korsakov
Overture to Rienzi.....Wagner

At the close of the two courses which he will teach during intersession, Professor N. L. Church, accompanied by Mrs. Church, will leave for Europe with a party of students whom he will guide on a musical pilgrimage.

Normal School Education

Professor W. C. Bagley, a member of the Commission that surveyed educational conditions in Iraq, wrote that the survey was finished but that he would remain to present the report to a convention of teachers to be held in Baghdad.

Professor E. S. Evenden spent March 28 and 29 with the faculties of the Wisconsin Teachers Colleges at their meeting in Madison, and the remainder of the week in Chicago in connection with the educational survey which is being conducted under Professor Strayer's direction.

Professor Florence B. Stratemeyer spent a day at the State Teachers College, Buffalo, N. Y., and one at the Fredonia State Teachers College where she visited students who are doing practice critic work at these institutions, and had conferences with individual members of the staff.

Professor Winifred Bain spent March 22 and 23 in Harrisonburg, Va., supervising the practice critic teachers in the State Teachers College. On March 24 she visited the training schools at East Radford State Teachers College, East Radford, Va.

Philosophy of Education

Professor William H. Kilpatrick participated in the Conference of Jews and Christians in Washington, D. C., on March 8, leading the U-Table discus-

sion. He spent March 22 in Providence, R. I., speaking to the public school teachers, the Parent-Teacher Associations, and the Rotary Club. He spoke to the staff of the Fifth Avenue Hospital of New York City on Wednesday, March 16.

Physical Education

Professor Jesse F. Williams was guest of honor at the Annual Athletic Dinner of Indiana State College, Indiana, Pa., on Saturday, April 9.

Dr. F. W. Maroney spoke at the State College of Agriculture at Athens, Ga., April 15, at the general meeting, on "Protect the Power House." The topic of his address before the sectional meetings, which were held April 16, was "Whither Physical Education?" On April 23 Dr. Maroney gave an address before the Camp Directors' Association meetings at Boston.

On March 12, Miss Mary Jo Shelly read a paper on "The Application of Selected Activities to Criteria" before the New York University symposium on character education through physical education.

The National Convention of the American Physical Education Association was held from April 19 to 23 in Philadelphia. Many members of the staff took an active part in the conferences. On April 20, Professor Clifford L. Brownell was chairman of the Research Section; on April 21 Miss Marjorie Hillas gave a report of the officials' rating committee at the round table discussion of women's athletics; also on April 21, Dr. Maroney acted as toastmaster at the banquet; Miss Mary O'Donnell conducted the Dancing Section meetings on April 22, and Miss Nita C. Sheffield acted as chairman of the Swimming Section, a newly organized section of the American Physical Education Association; Professor Williams presided over the General Session meetings April 22 and spoke at the students' meeting April 23 on "The Professional Spirit."

Miss Josephine Rathbone addressed the teachers of the Hawthorne Junior High School March 4 on "What You Might Contribute to the Children's Posture."

Professor Brownell spoke at the Teachers College luncheon at Temple University, Philadelphia, Saturday, April 23.

Religious Education

The annual convention of the Religious Education Association will be held this year at Columbia University, May 3 to 5. The major theme of the Convention will be "Moral and Religious Sanctions for Conduct." Careful consideration will be given to the Wickersham Report and similar studies dealing with the causes and cures of crime. For two days the convention will be divided into six seminars dealing with various phases of the central problem. Professor F. Ernest Johnson is chairman of the seminar on "Redirecting Human Behavior." Miss Margaret Forsyth and Dr. Paul M. Limbert are serving on the planning committees of other seminars.

Under the direction of Professor Johnson a study is being made of the professional field of religious education. More than five hundred questionnaires have been sent out to former students who have taken major courses in religious education at Teachers College. It is expected that this study of the needs of the field and the professional responsibilities of religious educators will lead to a reorganization of the work of the department.

In February the Association Press published a book by Dr. Limbert entitled *Jesus—Prophet of Galilee*. The book was prepared as a guide to a study of the insight of Jesus in the day of confusion in which he lived. It is being used by young people's groups in colleges and churches.

A test of knowledge and attitudes in regard to war, patriotism, and the agencies of peace, prepared by Professor Case and Dr. Limbert under the title "Around the World," has been published by the Association Press. The test, designed for children in the sixth to tenth grades, was given experimentally last fall to four hundred children.

The last two meetings of the Religious Education Club were addressed by Dean W. F. Russell and Bishop Francis J. McConnell, respectively.

Rural Education

The Colonial Press, Chicago, Ill., has published in pamphlet form an analysis by Professor E. De S. Brunner of the 1930 federal census of retail sales for places of less than 10,000 population. The title of the pamphlet is "Small Town Opportunity."

Professor Brunner addressed the annual assembly of Adult Education Centers in rural Delaware at Dover, Del., on March 9.

Secondary Education

The first volume of a three-volume anthology of literature for high schools, of which Professor Thomas H. Briggs is general editor, will shortly be issued by Houghton Mifflin Company.

During 1932 the following articles by Professor Briggs have been published: "A Program for Secondary Education," in *Proceedings of the National Association of Secondary School Principals*; same, condensed, and a condensation of "Jeremiah Was Right" in the April number of the *California Quarterly of Secondary Education*; "Enlarged Concept of Secondary Education," in *Proceedings of the Kentucky University Educational Conference*; and "Coöperating in Economy," in *Proceedings of the Southern Conference on Education*.

In the new course 100U, Public School Orientation, which will be given for the first time this summer, the entire department staff will participate during the second three weeks. The plans for this half-course were coöperatively made.

Beginning with the Summer Session of 1932, the diploma "Principal of High Schools" will be awarded only after a second year of graduate work, the first, in Teachers College or elsewhere, having

a satisfactory major in secondary education. In the second year a minimum of fifteen points must be elected from a list of six advanced courses in secondary education, the remaining fifteen or seventeen points elected according to the student's needs. In addition, as formerly, each student applying for the diploma must manifest such personal qualities and must have had such experiences as promise success. The diploma will be a symbol of successful advanced work midway between the master's degree and the doctorate.

Similarly, beginning in the Summer Session of 1932, the diploma "Principal of Junior High Schools" will be awarded only with the degree of Master of Arts. In addition to satisfactory personal qualities and experience, each candidate must have had six courses that are specified in the College catalogue.

During April Professor Briggs spoke before the Association of Military Colleges and Schools of the United States, the Silver Anniversary meeting of the Music Supervisors' National Conference, and the Indiana State Junior High School Conference.

The course on Secondary School Subjects will be offered for the first time during the coming Summer Session. In this course professors from the different subject matter fields will describe and interpret recent developments in content and method in their specialties. English will be treated by Professor Allan Abbott, mathematics by Professor W. D. Reeve, health by Dr. F. W. Maroney, music by Professor P. W. Dykema, science by Professor S. R. Powers, and the commercial subjects by Mr. E. W. Barnhart of the Federal Board of Vocational Education. The second half of the course will be offered during the Summer Session of 1933, and will treat history, social science, home economics, industrial arts, art, and foreign languages. Professor Grayson N. Kefauver will have the responsibility for administering this course.

Professor Briggs has conducted this spring an experiment in the use of oral new-type examinations, the results of which will be published soon.

Professor E. K. Fretwell was prevented by illness in his family from attending the meetings in March of the North Central Association of Colleges and Secondary Schools, to which he had been appointed a representative of the college.

The Camp Directors' Association at its annual meeting in March appointed a Committee of Seven, of which Professor Fretwell is chairman, to develop a plan for the reorganization of the Association.

Professor Kefauver was elected a Fellow in the American Association for the Advancement of Science at the meetings of the Association in New Orleans.

Two courses on the junior college will be offered in the department during the Summer Session. Dr. Ralph Bush of Santa Monica, Calif., will offer a course on the Junior College, a background course, and a course on Junior College Curriculum and Instruction. The latter course is being alternated with Junior College Administration.

Professor Kefauver spent April 9 and 10 in Washington, D. C., in connection with his responsibilities on the National Survey of Secondary Education. He spent May 13 and 14 in Washington attending the meetings of the consultants and staff of the National Survey of Secondary Education. At these meetings reports were made on the different investigations. Professor Kefauver will spend the second half of May and the entire month of June in Washington completing the manuscript of the survey report.

Mr. Harold Hand spent the month of April and the first two weeks of May obtaining data on the investigation of guidance in which he is assisting Professor Kefauver in the schools of Scotia, N. Y., Cincinnati, Pittsburgh, Providence, and Camden.

Professor Kefauver will be assisted during the Summer Session by Mr. Ted Bernard and Mr. J. Murray Lee, advanced graduate students in the department.

At a conference of New York City junior high school principals and teachers on April 16 Professor Fretwell spoke on the subject "Is a Typical Junior High School What New York City Needs?"

He spoke April 20 at the Delaware County Teachers Association meeting at Lansdowne, Pa.

A conference on secondary education will be held at Teachers College during the opening week of the Summer Session. This conference will be led by the members of the staff of Teachers College, members of the staff of the National Survey of Secondary Education, and other leaders in education. Meetings will be held Tuesday afternoon; afternoon and evening on Wednesday, Thursday, and Friday; and Saturday evening. Presentations will be made by Professors Briggs, Fretwell, Maxie N. Woodring, Percival M. Symonds, and Kefauver of the department of Secondary Education; by Dean William F. Russell, Dean Emeritus James E. Russell, Professors E. L. Thorndike, George S. Counts, I. L. Kandel, E. H. Reisner, H. F. Clark, J. H. Newlon, and J. R. McGaughy of Teachers College; Doctors Leonard V. Koos, Francis T. Spaulding, and A. K. Loomis, United States Commissioner William John Cooper of the National Survey of Secondary Education; Dr. Richard Allen, assistant superintendent of schools of Providence, R. I.; and probably Dr. Henry Suzzallo of the Carnegie Foundation for the Advancement of Teaching; and Owen D. Young, a member of the Board of Trustees of Teachers College. Among topics to be considered are: Philosophic and Psychologic Concepts of Secondary Education, Social Aspects of Secondary Education, The Organization of Secondary Education, Vocational Education, Guidance and Adjustment, The Curriculum and The Extracurriculum, The Junior High School.

Professor Kefauver will offer a new course in the Summer Session on the Administration of Guidance in Secondary Schools. This course will canvass the need and scope of guidance, the nature of the guidance program, the organization of the guidance service, and the principal's relationship to this program.

Professor Kefauver has been granted a leave of absence for the school year

1932-33, including the Summer Session of 1933. During this time he will serve as visiting professor at Stanford University.

The annual dinner and party of the Secondary Club held in the social and dining rooms on the mezzanine floor of John Jay Hall, Friday evening, April 1, was attended by more than fifty students and members of the staff of the Secondary Education department. The program following the dinner consisted of several violin solos by Mr. Paul Diederich, a member of the major class, several vocal solos by Professor Fretwell, a short, clever play, and group singing led by Professor Fretwell. During the latter part of the evening those present participated either in playing bridge or dancing.

The Thursday Afternoon Informal of March 17 was addressed by Professor Woodring on "The Use of the Excursion in the Schools of Germany." Professor Woodring spoke of the origin of the excursion in Germany, the organization of the hostels for youths, the reciprocal relations existing between communities for facilitating longer trips, and the coöperation of the government in making these excursions possible.

Professor Milton Smith spoke on the topic "The Work of the Play Director" at the Thursday Afternoon Informal of March 31. Professor Smith conducts an amateur play production laboratory for students in Columbia University and Teachers College, is associated with Mr. Hatcher Hughes in directing the Morningside Players, and has directed several plays that have appeared on Broadway. His listeners, being aware of his experience, gained a deeper appreciation of another important aspect of the theatre.

At the Thursday Informal of April 7 Miss Mary Tucker, a travel expert and enthusiast, gave an illustrated lecture on "The Santa Fe Trail."

Instead of the usual Thursday Afternoon Tea on April 14, the Secondary Group adjourned to one of the physical education rooms in Thompson Hall where Miss Mary P. O'Donnell, instructor in physical education, gave an interesting talk on aesthetic dancing. Her talk was followed by an artistic presentation by members of her classes of the types of dances discussed.

"Clothing" was the topic discussed by Professor Lillian H. Locke of the Household Arts Department at the Tea on April 21. Many valuable practical suggestions regarding the selection of clothing were presented.

At the Thursday Informal of April 28 Dr. Charles I. Lambert of the Department of Psychiatric Education discussed, in his inimitable manner, specific cases of maladjustment of high school pupils that were helped by psychiatric treatment, although these maladjustments were not apparent to the parents and teachers.

Those present at the Tea of May 5 enjoyed the illustrated lecture on "Indian Lore" presented by Mr. Julian Harris Salomon of the Dalton School, New York City, a specialist in Indian lore.

Miss Verna A. Carley will teach two courses during the Summer Session of 1932: An Introduction to High School Teaching, and Junior High School Teaching. Miss Carley has been a part-time instructor in the Department simultaneous with her work for the doctorate.

A course entitled Introduction to Secondary Education and designed to meet the requirements in principles, aims, and problems of secondary education in states that require or recommend a special course in this field as a part of the requirement for the high school teacher's certificate will be a new course in the Department this summer. The instructor will be Mr. George H. Armacost, who will also teach the course dealing with the Organization and Administration of the Junior High School.

Mr. George C. Galphin, principal of the high school at Hammonton, N. J., and Mr. Eugene Hinton, teacher in the Great Neck Preparatory School, Great Neck, L. I., will assist in the courses taught by Professor Woodring during the Summer Session.

The course in Tests and Measurements will be taught by Mr. J. Murray Lee in the 1932 Summer Session. Mr. Lee was formerly director of research at Burbank, Calif. He conducted during the past year a very thorough and comprehensive survey of practices relative to testing in the high schools of the United States.

Mr. George H. Armacost visited in May several junior high schools in Providence, R. I., Baltimore, Md., and Northern New Jersey.

Mr. Hubert H. Mills has accepted a position as instructor in secondary education at the University of Colorado for the 1932 Summer Session and academic year of 1932-33.

Mr. Leon C. High, principal of the High School at Great Neck, L. I., Mr. Lloyd N. Morrissett, principal of the Classen High School, Oklahoma City, Okla., and Mr. Robert Owens, principal of the Charles F. Brush High School, Euclid-Lyndhurst, Ohio, will return to assist Professor Briggs during the Summer Session.

During the Summer Session this year Professor Fretwell will be assisted in his courses by Mr. M. Channing Wagner, assistant superintendent of schools in charge of secondary education, Wilmington, Del., and by Mr. Eli C. Foster, principal of Central High School, Tulsa, Okla.

Professor Fretwell will lecture at the North Texas State Teachers College, Denton, Tex., June 14 to 17, in a special course in education arranged by Dean W. J. McConnell. June 20 to 30 he will teach in the Colorado State Teachers College at Greeley, Colo.

Bureau of Educational Service

The following changes in positions of Teachers College Alumni are reported by the Bureau of Educational Service:

Adams, Thurston, from coach, and teacher of high school mathematics, Foley High School, Foley, Ala., to associate director of physical education, and coach, Rye Country Day School, Rye, N. Y.

Arnett, Claude E., from part-time instructor in educational sociology, Teachers College, Columbia University, to professor of educational sociology at State Teachers College, Emporia, Kan.

Arnold, Carma L., from remedial teacher and school tutor, Berkeley Institute, Brooklyn, N. Y., to teacher of sixth grade, Public schools, Scarsdale, N. Y.

Bardes, Ruth, from teacher of French, Public Schools, Saranac Lake, N. Y., to teacher of French, Far Rockaway High School, Far Rockaway, N. Y.

Barnard, Ford B., appointed critic teacher of history of education, Brooklyn College, Brooklyn, N. Y.

Bell, Samuel W., from assistant to the dean, Dana College, Newark, N. J., to teacher of English, St. Francis High School, Brooklyn, N. Y.

Bents, Caryl, from director of the kindergarten, Ohio State University, Columbus, Ohio, to director of the pre-kindergarten group, Brookside School, Montclair, N. J.

Berkstresser, Katharine, from instructor in speech, Iowa State Teachers College, Cedar Falls, Iowa, to teacher of speech, High School, Richmond Hill, L. I.

Blethen, Helena, from commercial teacher, Pace Business Institute, Yonkers, N. Y., to commercial teacher, Junior Business Training, Lyndhurst, N. J.

Bonney, Charlotte, from director of health and physical education, State Teachers College, Oshkosh, Wis., to director of health and physical education, Training School, Paw Paw, Mich.

Bowman, Carrie E., from kindergarten assistant, Lincoln School, Teachers College, New York City, to kindergarten critic, State Teachers College, Bellingham, Wash.

Buros, Oscar, from principal of the Washington School, Millburn, N. J., to assistant professor of education, Rutgers University, New Brunswick, N. J.

Chenault, Price, appointed teacher of civics and physical education, Summit Public Schools, Summit, N. J.

Covell, Elizabeth F., from instructor in dramatics, Sea Pines School, Brewster, Mass., to teacher of speech, Brooklyn College, Brooklyn, N. Y.

Diederich, Paul B., from assistant in Latin, Teachers College, Columbia University, New York City, to assistant professor of Latin, Ohio State University, Columbus, Ohio.

Drake, Bernard W., from supervising principal, Silver Creek Public Schools, Silver Creek, N. Y., to supervising principal, Babylon Public Schools, Babylon, N. Y.

English, Jean, appointed teacher of pre-kindergarten group, Staten Island Academy, New Brighton, S. I.

Forcey, Frances H., from teacher of art, Princess Issena School, Daytona Beach, Fla., to teacher of art, Seabreeze Private School, Daytona Beach, Fla.

Geiger, Mildred D., from teacher of first grade, Public Schools, Evanston, Ill., to primary teacher, Public Schools, Bronxville, N. Y.

Gould, Warren H., from dean, preparatory school, Brooklyn, N. Y., to instructor, Riverside Grammar School, Gill, Mass.

Graeske, Huldah, from business position, Skidmore College, Saratoga Springs, N. Y., to commercial teacher, Hope Farm School, Verbank, N. Y.

Handy, Etta, from assistant in research, General Foods Co., New York City, to director of dormitories, Lawrence College, Appleton, Wis.

Hetmansperger, Marguerite, from teacher of first grade, Public Schools, New Rochelle, N. Y., to kindergarten critic, State Normal College, Ypsilanti, Mich.

Hicks, Samuel I., from supervising principal, Central Park Public Schools, Central Park, N. Y., to supervising principal, Pearl River Public Schools, Pearl River, N. Y.

Howard, Serena, from student worker, Goodwill Industries of New Jersey, Jersey City, N. J., to director of religious education, Jefferson Park Church, New York City.

Hutchinson, Mary McClure, from director of placement service, Morehead State Teachers College, Morehead, Ky., to assistant professor of education, Mississippi State College for Women, Columbus, Miss.

Jacobsen, Jennie, from general assistant at Bergdorf-Goodman, New York City, to designing sportwear, Richelieu Sportwear Division of the Van Dyke Knitting Company, Milwaukee, Wis.

Jessee, Dan E., from head baseball coach, Pacific University, Forest Grove, Ore., to instructor in physical education and coach of football, Trinity College, Hartford, Conn.

Jones, Reba M., from teacher of English, Central Grammar School, Hudson, N. Y., to teacher of English, Utica Free Academy, Utica, N. Y.

Lacoste, Roberto, from professor of natural sciences, Colegis Nacional, Presidente Sarmiente, Buenos Aires, Argentina, to instructor in French and Spanish, High School, Tenafly, N. J.

LaFortune, Elwood A., appointed vice-principal, Senior High School, Ithaca, N. Y.

Landis, Emerson H., from principal, Kiser High School, Dayton, Ohio, to assistant superintendent of schools, Public Schools, Dayton, Ohio.

Lawsing, Margaret B., from art instructor, Oregon State College, Corvallis, Ore., to art instructor, Indiana State Teachers College, Terre Haute, Ind.

LeBrun, John J., from instructor, industrial arts, Dalton School, New York City, to instructor, industrial arts, Tilden High School, Brooklyn, N. Y.

Leslie, Earl, from instructor in physical education, State Teachers College, Montclair, N. J., to instructor in physical education, Pennsylvania State College, State College, Pa.

Loebs, Gilbert, from instructor in physical education, Lincoln School, Teachers College, to assistant professor of physical education, Pennsylvania State College, State College, Pa.

Long, H. L., from director of physical education and health, Public Schools, Lincoln, Neb., to field parole agent, Department of Public Welfare, Chicago, Ill.

McCormick, Myrtle, from teacher of sixth grade, Ethical Culture School, New York City, to teacher of fourth grade, Public Schools, New Rochelle, N. Y.

Martin, Elfric H., from teacher of mathematics and physical education, Country Day School, Scranton, Pa., to teacher of mathematics, Technical High School, Scranton, Pa.

Matthews, M. Taylor, appointed head of department of sociology, Polytechnic Institute of Porto Rico, San German, Porto Rico.

Maybauer, Madeline, from teacher of the first grade, Public Schools, Shaker Heights, Ohio, to teacher of pre-primary group, the Dalton School, New York City.

Miler, Ruth T., from teacher of mathematics, Armijo Union High School, Fairfield, Calif., to social director, University Hospital School of Nursing, Ann Arbor, Mich.

Miller, Hortense, from supervisor of grade music, Portsmouth Public Schools, Portsmouth, Ohio, to teacher of music, Francis J. Pennington School, Mount Vernon, N. Y.

Milos, John, appointed instructor in mathematics, Pelham Junior High School, Pelham, N. Y.

Moon, Mary, from principal of Fallsington Friends School, Fallsington, Pa., to teacher of fourth, fifth, and sixth grades, Friends School, Westtown, Pa.

Morse, Junia L., from associate dean of women, State Teachers College, West Chester, Pa., to teacher of English, State Normal School, Glassboro, N. J.

Norgaard, Martin A., from instructor in mathematics, Hunter College, New York City, to head of mathematics department, Wagner College, Staten Island, N. Y.

Nunnally, Nancy, from kindergarten teacher, Northrup Collegiate School, Minneapolis, Minn., to teacher of first grade, Summit School, St. Paul, Minn.

Pope, Ruth V., from associate dean, Beaver College, Jenkintown, Pa., to academic dean, Hood College, Frederick, Md.

Pryor, Frances, appointed teacher of sixth, seventh, eighth grades, Ossining School for Girls, Ossining, N. Y.

Pugsley, Helen, appointed nutritionist, American Red Cross, Lewiston, Me.

Redefer, Frederick L., from superintendent of schools, Glencoe, Ill., to secretary of the Progressive Education Association, New York City.

Reid, Mary J., from teacher of first grade, Brookside School, Montclair, N. J., to teacher of first grade, Public Schools, Bronxville, N. Y.

Ritchie, Raymond R., from assistant superintendent of schools, Atlanta, Ga., to director of research, Public Schools, Dayton, Ohio.

Ross, Ian H., from business manager, Punahou School, Honolulu, T. H., to director of teacher training, Hampton Institute, Hampton, Va.

Ross, Lela J., from instructor in foods and nutrition, Iowa State College, Ames, Iowa, to instructor in foods, University of New Mexico, Albuquerque, N. M.

Shaw, Mae, from instructor in physical education, Lewis and Clark High School, Spokane, Wash., to assistant professor of physical education, College of the Pacific, Stockton, Calif.

Shelly, Mary J., from part-time assistant

in Teachers College, to instructor in physical education, The New College, Teachers College, New York City.

Sherwood, Mildred E., from teacher of second grade, Public Schools, Smyrna, Del., to teacher of second grade, Summit School, St. Paul, Minn.

Simmons, Mary A., from supervisor of first grade, Western State Teachers College, Kalamazoo, Mich., to assistant in third grade, Public Schools, Glenville, Conn.

Skinner, Helen, from instructor in physical education, University of Kentucky, Lexington, to instructor in physical education, Smith College, Northampton, Mass.

Streit, Olive C., from teacher of French, Hudson River Day School, Hastings-on-Hudson, N. Y., to teacher of French, Friends School, Brooklyn, N. Y.

Talbot, Louisa, from assistant in chemistry, Teachers College, Columbia University, to teacher of home economics, High School, Portsmouth, N. H.

Talley, Margaret, from assistant in mathematics, Vail-Deane School, Elizabeth, N. J., to teacher of mathematics, Mary C. Wheeler School, Providence, R. I.

Tansil, Rebecca, appointed registrar, Maryland State Normal School, Towson, Md.

Taylor, George F., appointed associate rector, Church of the Ascension, New York City.

Tenny, Mildred, from grade teacher, Public Schools, Des Moines, Iowa, to primary grade teacher Ethical Culture School, New York City.

Thomas, Elizabeth N., appointed instructor in commercial education, Y.W.C.A., Brooklyn, N. Y.

Thomas, Joseph, from French and Latin teacher, High School, Elizabeth, N. J., to French and Latin teacher, High School, Georgetown, Del.

Thompson, Catherine, from instructor in physical education, Washington High School, East Chicago, Ind., to instructor in physical education and athletics, Iowa State Teachers College, Cedar Falls, Iowa.

Thompson, Ethel K., from head of piano department, Phillips High School, Birmingham, Ala., to supervisor of music, Public Schools, Ridgefield, Conn.

Thompson, Marjorie E., from teacher of French, Alexander Hamilton Junior High School, Cleveland, Ohio, to teacher of English, Junior High School, Westfield, N. J.

Thompson, Pauline, from assistant in curriculum research, Lincoln School, Teachers College, to librarian, elementary school, Bronxville, N. Y.

Thompson, Robert L., appointed teacher of history, Linden High School, Linden, N. J.

Thomson, Mary I., from associate director of health education, Y.W.C.A., Utica, N. Y., to instructor in health and physical education, The Margaret Eaton School, Toronto, Ontario, Can.

Tillman, Madeline, from kindergarten teacher, Hazleton and McKinley Schools, Stockton, Calif., to teacher training, Language School, Tokyo, Japan.

Tindall, Mae, from first grade teacher, Lincoln School of Teachers College, New York City, to first grade teacher, Out-of-Door School, Sarasota, Fla.

Tippett, Mary Allen, from art instructor, Vocational School, Battle Creek, Mich., to director of arts and crafts, Children's Village, Dobbs Ferry, N. Y.

Tompkins, Lily B., appointed teacher of English and history, High School, Oceanside, L. I.

Torkelson, Ottile, from instructor and assistant director of nursery education, Kansas University School of Nursing, Kansas City, Mo., to instructor in health and personal hygiene, Missouri Baptist Hospital School of Nursing, St. Louis, Mo.

Townes, Willmina, from kindergarten teacher, Hamden Hall Country Day School, New Haven, Conn., to teacher of first grade, Community School, St. Louis, Mo.

Townsend, Harriet, appointed kindergarten assistant, Wyoming Public School, Millburn, N. J.

Trask, Helen M., from fourth grade teacher, demonstration school, Georgetown, Del., to fourth grade teacher, Brookside School, Montclair, N. J.

Trent, Kate, from critic teacher, State Teachers College, Fredericksburg, Va., to critic teacher, Michigan State Normal College, Ypsilanti, Mich.

Trowbridge, Gail, from instructor and supervisor of art, Bronxville Elementary

School, Bronxville, N. Y., to supervisor of art, Public Schools, Millburn, N. J.

Trunk, Marie M., appointed vocational guidance teacher, Junior and Senior High School, Lebanon, Pa.

Tubb, Margaret, from instructor in art, Riverside School, Memphis, Tenn., to head of art department, Johnson Normal School, Johnson, Vt.

Tuggey, Howard B., from principal of Stony Brook Junior High School, Stony Brook, N. Y., to teacher of physics and physiography, High School, Mount Vernon, N. Y.

Turnbull, Jenny C., appointed teacher of physical education, Y.W.C.A., Washington, D. C.

Turner, Marion, from teacher of home economics, Woodbury High School, Salem, N. H., to teacher of homemaking, High School, Watkins Glen, N. Y.

Turney, Dorothy, from special teacher of English, Salinas High School, Salinas, Porto Rico, to Spanish instructor, Newburgh Free Academy, Newburgh, N. Y.

Tyler, Helen Gould, appointed assistant professor of home economics, Lincoln University, Jefferson City, Mo.

Tyler, I. Keith, appointed supervisor of junior high schools, Allegany County, Md.

Tyler, Tracy F., appointed executive assistant to National Committee on Education by Radio, Washington, D. C.

Van Doren, Harold S., from head of the science department, Tutoring School, New York City, to instructor in science and mathematics, Dearborn-Morgan School, Orange, N. J.

Van Ness, Paul H., appointed teacher of social sciences, Harrington Park School, Harrington Park, N. J.

Van Spanje, Ida G., from tea room manager, Merchants Refrigerating Co., New York City, to teacher of foods, Y.W.C.A., Newark, N. J.

Vanderlip, Robert G., from teacher of sixth grade, Scarborough School, Scarborough, N. Y., to teacher of English, Junior High School, Washington, D. C.

Velie, Ruth, from kindergarten teacher, Packer Collegiate Institute, Brooklyn, N. Y., to kindergarten teacher, Hamden Hall School, New Haven, Conn.

Vernier, Elmon, from assistant director of physical education, University of Cincinnati, Cincinnati, Ohio, to director of physical education for boys, High School, New Rochelle, N. Y.

Waite, Helen, from teacher of foods and related sciences, Gallatin County High School, Bozeman, Mont., to instructor in home economics, demonstration school, University of Iowa, Iowa City, Iowa.

Waldo, Cornelia J., from teacher of mathematics, High School, Shinglehouse, Pa., to teacher of mathematics and science, Junior and Senior High School, Middleburgh, N. Y.

Walke, Nelson S., from instructor in physical education, Withrow High School, Cincinnati, Ohio, to instructor in physical education, Pennsylvania State College, State College, Pa.

Walker, Alice W., from assistant in music, Tower Hill School, Wilmington, Del., to assistant teacher of music, Elementary Schools, Newark, N. J.

Walker, Catherine, appointed teacher of mathematics, Fort Smith Junior College, Fort Smith, Ark.

Walker, Jennie L., from head of biology department, High School, Englewood, N. J., to substitute for supervisor of science, State Normal School, Potsdam, N. Y.

Ward, Medora M., from head of Fashion Bureau, Flint & Kent, Buffalo, N. Y., to associate home economics specialist, Bureau of Home Economics, Washington, D. C.

Ward, William T., elected superintendent of schools, Deerfield, Kan.

Wardle, Evelyn, from sixth grade teacher, Jewish Center School, New York City, to fifth grade teacher, Ramapo Valley School, Suffern, N. Y.

Ware, E. Spencer, from teacher of English, Abington High School, Poughkeepsie, N. Y., to assistant supervisor of English, Public Schools, Albany, N. Y.

Ware, Jeannette, from teacher of home economics, High School, Wallace, Idaho, to teacher of home economics, High School, Linden, N. J.

Warner, Wrey A., from health director, Y.W.C.A., New Orleans, La., to head of physical education department, Constantinople Woman's College, Istanbul, Turkey.

Watson, Dorothy E., from personnel worker, James Ells Employment Service,

Minneapolis, Minn., to teacher of English, Columbia High School, South Orange, N. J.

Watson, Miriam, from elementary teacher, Waterproof Public School, Waterproof, La., to elementary teacher, Public Schools, Mount Vernon, N. Y.

Watson, Vesta, from second grade training teacher, State Teachers College, Denton, Tex., to first grade training teacher, State Teachers College, East Stroudsburg, Pa.

Wehr, Theresa, from Latin critic teacher, State Teachers College, Terre Haute, Ind., to Latin teacher in Oakwood High School, Oakwood, Dayton, Ohio.

Wells, Marie E., from assistant manager, Commons Cafeteria, Columbia University, to nutritionist, Society for Prevention of Cruelty to Children, Rochester, N. Y.

Wells, Marie E., from dietitian and nutritionist, Wallace Bay, Nova Scotia, to nutrition specialist, Cornell University, Ithaca, N. Y.

Wells, Marion A., from teacher of English, Junior High School, Watertown, Conn., to teacher of English, Junior High School, East Hartford, Conn.

Westcott, Mary, from assistant in Latin and French, Tower Hill School, Wilmington, Del., to nursery school assistant, Child Development Institute, Teachers College, New York City.

Westenhaver, Mattie W., from house director, Harriet Judson Y.W.C.A., Brooklyn, N. Y., to housekeeper, Grace Hospital, New Haven, Conn.

Wetterer, Thelma, from instructor in physical education, Benjamin Franklin Junior High School, Uniontown, Pa., to instructor in physical education, DeWitt Clinton Junior High School, Mount Vernon, N. Y.

White, Heath Edgar, elected superintendent of schools, Westport, Conn.

Whiteley, Nan, from fifth grade teacher, Calhoun School, New York City, to fourth grade teacher, Brooklyn Ethical Culture School, Brooklyn, N. Y.

Wickwire, Chalmers, from instructor in mathematics and science, County Academy, Truro, Nova Scotia, Can., to instructor in general science, Public Schools, Glens Falls, N. Y.

Wilde, Eva Louise, appointed head of lower school, Castilleja School, Palo Alto, Calif.

Wilkinson, Esther, from critic teacher, Richmond Normal School, Richmond, Va., to kindergarten-primary education instructor, Normal School, New Haven, Conn.

Williams, Georgianna, from commercial teacher, High School, Weehawken, N. J., to commercial teacher, Senior High School, Mount Vernon, N. Y.

Williamson, Obed J., appointed head of department of education, State Normal School, Cheney, Wash.

Willis, Margaret, from professor of history, Constantinople Woman's College, Istanbul, Turkey, to head of department of history, The Bennett School, Millbrook, N. Y.

Wilson, Frances, from student teacher, Wadleigh High School, New York City, to teacher of English, Junior High School, Red Bank, N. J.

Wilson, Harry, from music supervisor, High School, Eureka, Kan., to supervisor of music, Public Schools, Hastings-on-Hudson, N. Y.

Wilson, Marie W., from assistant dean of women, Miami University, Oxford, Ohio, to vocational counselor, Syracuse University, Syracuse, N. Y.

Winne, Gladys E., from first grade demonstration teacher, demonstration school, Georgetown, Del., to first grade teacher, Public Schools, Bogota, N. J.

Wittlinger, Bertha, from associate professor of biology, State Teachers College, Harrisonburg, Pa., to instructor in biology, Hunter College High School, New York City.

Wood, Virginia M., from fourth grade teacher, Nazareth Grammar School, Nazareth, Pa., to teacher of art, Chestnutwold School, Haverford Township, Pa.

ALUMNI NOTES

TEACHERS COLLEGE ALUMNI ASSOCIATION OFFICERS

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Address all communications to MARGARET E. SOBER,
General Secretary of Alumni Association, Teachers College, New York City.

ANNOUNCEMENT OF ALUMNI ELECTION

ALUMNI TRUSTEE

DR. J. CAYCE MORRISON

Assistant Commissioner for Elementary Education, New York State Department of Education, Albany, N. Y.

The Alumni Association of Teachers College takes pleasure in announcing the reëlection of Dr. Morrison to office as Alumni Trustee for 1932–1934

Leonard B. Job (Ph.D. 1926) has been appointed president of Ithaca College, Ithaca, N. Y.

Alice E. Curtin (M.A. 1928) is supervisor of the fifth, sixth, and seventh grades in the Training School of the State Teachers College, Farmville, Va.

Grace E. Mix (B.S. 1912) is assistant principal and supervisor of the kindergarten in the Training School of the State Teachers College, Farmville, Va.

Archie M. Palmer (M.A. 1927), associate secretary of the Association of American Colleges, has been invited by

President Ernest L. Stockton of Cumberland University, Lebanon, Tenn., to deliver the commencement address at that institution on May 25. He has also been invited by President William J. Clark of Virginia Union University, Richmond, Va., to deliver the commencement address at that institution on June 7.

Marion C. Sheridan (B.S. 1913), head of the department of English, New Haven High School, New Haven, Conn., spoke on "Aspects of High School Supervision" at the annual meeting of the New England Association of Teachers of English held March 11 and 12 in Boston.

W. H. Hill (M.A. 1931) is supervising principal of Swedesboro Public Schools, Swedesboro, N. J.

John W. Reel (M.A. 1931) is director of recreation in Bismarck, N. D.

Joseph E. Avent (Ph.D. 1925) has recently published a book entitled *The Excellent Teacher*, and is now preparing one on *Excellences and Errors in Classroom Management*.

Grace Gordon Hood (M.A. 1913) is itinerant training teacher for home economics education for adults, University of Minnesota, St. Paul, Minn.

Amanda Hebeler (M.A. 1928), director of training at the Washington State Normal School, Ellensburg, Wash., will be the leader of a progressive education seminar in Europe this summer.

Marcia A. Everett (M.A. 1926), one of the New Jersey helping teachers, has worked out, with the aid of a committee of other helping and regular teachers, *A Handbook in Social Studies and Related Activities* for primary teachers.

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LEONARD V. KOOS
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GRAYSON N. KEFAUVER
Associate Professor of Education, Teachers College, Columbia University

HERE is a textbook for courses in guidance, a manual for administrative officers, and a record for all who would read of the nature, possibilities, and present extent of the guidance movement in secondary schools.

It takes up the efforts which secondary schools are making and should make to distribute youth as effectively as possible to educational and vocational opportunities, and to help the individual to make the optimal adjustment to educational and vocational situations. The recreational, health, and civic-social-moral aspects as well as the vocational aspect of guidance are considered. The discussion centers around a core of practices reported by almost four hundred schools, from all parts of the country, ranging from junior high schools to junior colleges. The book also covers in critical review all the research done to date in the field.

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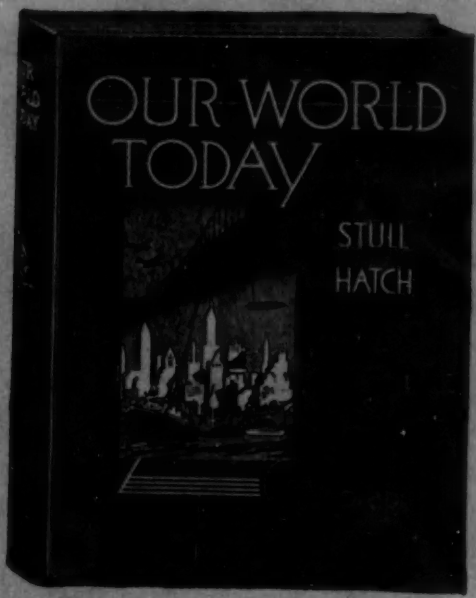

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